

# WISE GUYS: CLOSURE AND COLLABORATION IN THE AMERICAN MAFIA

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# WISE GUYS: CLOSURE AND COLLABORATION IN THE AMERICAN MAFIA

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How do organizations obtain access to valued resources without diluting the loyalties and identities of their members? Network analysts suggest focusing on the boundary-spanning activities of “brokers” who bridge gaps in social structure. In many contexts, however, brokers are viewed with suspicion and distrust rather than rewarded for their diversity of interests. This dissertation examines organizations in which the theoretical deck is seemingly stacked against brokerage and toward parochialism: American-Italian mafia families. Through an institutional analysis of the mafia organization, I trace how ethnic and organizational closure led marginalized actors to seek alternative paths to enrichment beyond the family-controlled networks and industries. Using a historical network data set, I document a division of network labor in which a small number of brokers—often, surprisingly, ethnic outsiders and lower-status criminals—bridged otherwise disconnected islands of criminal activity. More than coordination among elite criminals, it was entrepreneurial action by marginal and excluded actors—outsiders operating largely beyond the control of mafia organizations themselves—that generated the integrated and highly connected mafia network. This dissertation accounts for a striking historical paradox by showing how it was possible for the American Mafia to appear for all intents and purposes to be a well-organized national conspiracy even as the individual groups involved remained organizationally and geographically separate from one another.

## BIOGRAPHICAL SKETCH

Daniel DellaPosta was born in North Providence and raised in Smithfield, Rhode Island. Before beginning in the Ph.D. program in Sociology at Cornell University, he received a B.A. in Sociology from the University of Chicago in 2011. While at Cornell, his research has focused on the study of social networks, economic sociology, and politics. While addressing diverse empirical and theoretical puzzles, this work is united by a core emphasis on fundamental mechanisms through which interdependent actors collectively shape social structure. His work has been published in the *American Journal of Sociology*, *Social Forces*, *Social Networks*, *Research in Social Stratification and Mobility*, and *Rationality and Society*. In the Fall of 2017, he will begin an appointment as Assistant Professor of Sociology at the Pennsylvania State University.

*For my parents, Joanne Flynn DellaPosta and Steven Anthony DellaPosta*  
*And for Hide*

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## CHAPTER 1

### THE PUZZLE OF MAFIA ORGANIZATION

In May of 1950, the U.S. Senate formed a special committee led by Tennessee Senator Estes Kefauver to investigate the extent of organized crime’s influence on interstate commerce. Over the course of one year, the Kefauver Committee heard testimony from more than 600 witnesses in 14 cities (U.S. Senate 1951). The conclusions drawn by Kefauver and his colleagues would ignite decades of subsequent debate. The committee’s report read: “There is a nationwide crime syndicate known as the Mafia...Its leaders are usually found in control of the most lucrative rackets in their cities. There are indications of a centralized direction and control of these rackets” (quoted in Bell 1953, p. 143). Amid dawning public and political awareness of Italian-American criminal groups operating in many American cities, Kefauver was far from alone. Prominent scholars, law enforcement officials, and political figures dedicated volumes to describing the American version of *La Cosa Nostra*, a collection of criminal groups—or “families”—belonging to a centrally organized and pseudo-bureaucratic entity controlling criminal rackets nationwide (e.g. Anderson 1965; Cressey 1969; U.S. Senate 1951).

Yet Kefauver’s assessment also invited quite understandable skepticism. A distinguished camp of dissenters quickly emerged to counter Kefauver’s claims of a mafia conspiracy as myths stoked by overzealous politicians and aimed deliberately at smearing recently immigrated Italian-Americans (Albini 1971; Bell 1953; Gallhier and Cain 1974; Hess 1973). Most famously, the Harvard social scientist Daniel Bell

bemoaned that “unfortunately for a good story—and the existence of the Mafia would be a whale of a story,” investigations undertaken by the U.S. Senate had not “presented any real evidence that the Mafia exists as a functioning organization” (Bell 1953, p. 143). For Bell and others, Italian-Americans stuck in the lower rungs of the class hierarchy in urban immigrant enclaves had taken to criminal activity just like members of previous immigrant groups had done in earlier generations when finding other ladders of opportunity blocked due to discrimination and accumulated disadvantage (also see Merton 1938). To frame such activity as evidence of a nationwide criminal conspiracy was surely a bridge too far.

Few institutions are as well-studied and yet poorly understood as the American Mafia. What exactly do we mean when we speak of this sphinx-like entity, one that seems to take different shapes the closer one looks? Do we refer to a central organization controlling criminal activity across the United States? Or, quite differently, to a set of disjointed and largely unrelated local criminal assemblies? Or perhaps, instead, to some combination of both? Previous work has struggled to resolve such questions convincingly, especially for lack of data and evidence that would shed definitive light on the answers. Despite attempts by sociologists (Albini 1971; Gambetta 1993), economists (Reuter 1983), historians (Lupo 2009), anthropologists (Ianni and Reuss-Ianni 1972), and criminologists (Abadinsky 1983; Paoli 2003) to describe and explain this social institution, the Mafia remains enigmatic in nature. The fiercest debate—and one revisited in this dissertation—revolves around a deceptively simple question: *How organized is organized crime?* Or, to put a slightly different twist on it: *How is organized crime organized?*

This dissertation provides the most extensive and large-scale analysis to date of the network of criminal relationships that comprised the American Mafia at its mid-20th century height of historical influence. Drawing on a unique archival data set with rich biographical information on over 700 members and associates of 24 American mafia families, I show that proponents of the “mafia conspiracy” correctly identified the national *scope* of mafia organization, but misdiagnosed the *mechanisms* giving rise to this organization. On one hand, the network of criminal affiliations linking mafia members across U.S. cities reflects a cohesive and well-integrated structure that would allow any single individual to reach any other through just a few well-placed intermediaries. While the existence of such a national network clearly indicates that the Mafia was not merely local and parochial in structure, however, neither does it confirm the existence of a top-down organizational structure featuring centralized control. Rather, by examining *who* produced the key inter-organizational links in the mafia network—and under what conditions—I demonstrate that the cohesiveness of this network owed largely to entrepreneurial criminals operating beyond the control of formal mafia organizations. To this end, the dissertation identifies a great and heretofore unexplored irony: American mafia families, despite their noted emphasis on closed membership and undivided commitment, combined to form a national criminal enterprise largely because of ties formed by outsiders excluded from the power structures of those very same families.

While the Mafia is an important and consequential social institution in its own right (Dixit 2004; Mastrobuoni and Patacchini 2012; Milhaupt and West 2000; Putnam et al. 1994; Schelling 1984), this dissertation uses the historical and empirical

puzzle of mafia organization to engage theoretical puzzles with broader resonance. And like all great puzzles, the ones addressed here have multiple layers, such that peeling back one inevitably reveals more rather than less need for further exploration. How do interorganizational networks balance local closure with integration and openness? What are the consequences—both intended and unintended—when organizations institute rules and norms to incentivize commitment and discourage opportunism? How do individual actors balance the potential benefits of brokerage against the reputation costs within a parochial group?

A skeptic would certainly suggest that we will find great difficulty in generalizing the dynamics of social and economic organization in mafia families to other, more familiar institutional contexts. While exotic to most social scientists, however, the mafia family provides a surprisingly faithful analogue to units of organization in a variety of non-criminal contexts. Like agents in other realms, mafiosi are entrepreneurial actors who seek individual gain within the constraints of membership in solidaristic groups. Individuals balance the benefit of access to novel and non-redundant information and resources against the risk of venturing outside of a closed social circle. Groups are marked by norms of closure that restrict access to collective resources to those who carry the badge of membership. Yet, because members of different groups have access to complementary resources, individuals and groups alike have a cautious interest in non-parochial collaboration and coordination. In line with the goal of speaking to broader theoretical puzzles, the theoretical mechanisms discussed later in this introductory chapter will be presented in a sufficiently general way as to invite application beyond the mafia context.

Furthermore, the data set employed in the present study (discussed at length in Chapter 2) is relatively unique in the literature on network organization for the granular detail it provides across multiple levels of analysis. Most notably, the data allow me to analyze individuals and groups concurrently—and with regard both to network organization within groups and to the structures of interconnection between groups. Past studies have typically been restricted to analyzing ties among individuals or between organizations, but not both simultaneously.

## 1.1 A Parochial Conspiracy

In his groundbreaking and widely-cited book *The Sicilian Mafia*, Diego Gambetta (1993) argues that the Mafia is little more than a “brand name” whose adherents sometimes—depending on the circumstance—loosely organize to form a cartel. Within this structure, organizations or “families” act as firms and individual mafiosi as clients of the firm.<sup>1</sup> The defining feature of mafia business lies neither in the provision of illegal goods (many of the goods dealt by mafiosi are legal) nor in the exercise of violence (which is avoided whenever possible). Instead, the mafioso is most efficiently seen as an entrepreneur of a specific good: *protection*. Protection from whom? Often times, the mafioso himself.<sup>2</sup> In other cases, however, the pur-

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<sup>1</sup>Following convention, I use “mafioso” in the singular and “mafiosi;” in the plural to refer to affiliates of mafia families. For my purposes, it is sufficient to say that this category would include groups that were recognized by law enforcement and other families as part of the loose-knit national “cartel” usually known as the American Cosa Nostra. While others have discussed at length the distinction between mafiosi and other criminals (e.g. Gambetta 1993), such definitional issues are at best a distant concern for my analysis.

<sup>2</sup>I use male pronouns throughout this dissertation to reflect the general limitation of membership in a mafia family to males.

chase of protection has more tangible benefits (besides ensuring that one's kneecaps remain intact). Gambetta illustrates this point with the example of an entrepreneur of secondhand horses who purchases the services of mafioso Pepe in order to warn potential sellers against trying to part with substandard animals (what Gambetta terms "equine lemons"). The mafia thus operates as one form of "private ordering" for the governance of economic exchange (also see Dixit 2004).

To understand the structure of economic exchange internal to the mafia ranks, however, we must consider a somewhat different question: How does the mafioso protect himself from the predation of other mafiosi? In other words, how do mafiosi generate within their own membership that which they provide to outsiders? Here, Gambetta's answer—that the mafioso becomes his own customer in the protection market—may be unsatisfying. While the mafioso clearly strives to cultivate a reputation for violent capability, the danger is that one might actually be called upon to prove it. Unfortunately for them, mafiosi are not exempt from the general human tendency to be inefficient and sloppy in the exercise of violence (Collins 2008). Indeed, attempts at dispute resolution through violence are regarded as a last resort and prone to spectacular failure (Reuter 1983). Perhaps the most famous example is mid-level mafioso Vincent "The Chin" Gigante's failed 1957 assassination attempt on New York boss Frank Costello, which was ruined when Gigante yelled at Costello—thereby alerting him to the impending gunshot—just before firing.

Compounding this issue, the illegal nature of mafia business makes the legal enforcement of transactions impossible, eliminating the force of state-initiated property



rights and contract law (Coase 1937; North 1990; Williamson 1996). Furthermore, trust between mafiosi—which could grease the wheels of economic exchange (Macy and Skvoretz 1998; Macy and Sato 2002; Yamagishi and Yamagishi 1994; Zucker 1986)—is a precious and limited resource in a market of hardened criminals (Gambetta 1993; Maas 1969; Reuter 1983). Some mistakenly take the symbolism of the Mafia—particularly its emphasis on fictive kinship—as a sign of high trust. Gould (1999) aptly points out that if group cohesion “were as strong as members say, they would not need to talk about it quite so often” (p. 376). Similarly, Gambetta (1993) suggests that the institutional myth of the mafioso as a “man of honor” (in contrast to the common criminal) merely fulfills the “technical requirement” of an inflated reputation (p. 46).

Bilateral or multilateral enforcement of agreed-upon business norms might provide an alternative governing mechanism (Ellickson 1991; Granovetter 1985; Greif 2006; Macaulay 1963; Nee and Oppen 2012; Uzzi 1996). However, previous accounts suggest that norm-breaking occurs frequently (Gambetta 1993, p. 7) and is irregularly sanctioned; while the wronged mafioso can complain to the boss of the crime family, the resulting judicial process—dependent on the boss’s individual allegiances and whims—can be unpredictable (Maas 1969). And while the “shadow of the future” (Axelrod 1984) may be sufficient to ensure good behavior in some exchanges, the underground nature of mafia business makes it difficult even to find out if another mafioso had wronged you. For instance, profit splits among mafiosi are handled informally by providing partners their “cut” or “vig,” providing opportunities for subtle malfeasance.

This inherent difficulty of trusting one’s potential business partners must affect the resulting structure of economic exchange, as individual actors form ties on the basis of an alter’s expected behavior and dissolve them in response to deviation from those expectations. In particular, we might expect a lack of formal contract enforcement combined with frequent norm-breaking and unscrupulous behavior to produce a “toxic stew” of the sorts that lead actors to rely heavily on embedded strong ties (e.g. Granovetter 1985; Portes and Sensenbrenner 1993; Uzzi 1996, 1997). Within a densely connected network cluster, potential malfeasance is at least limited by third-party pressures and the potential for negative reputational effects to spread quickly among all of one’s potential dance partners. For the actor engaged in illegal or underground economic activity, furthermore, network closure facilitates not only the assurance of transactions but also the maintenance of secrecy and detection avoidance (Baker and Faulkner 1993). Accordingly, scholars suspect that mafiosi and other criminals construct their network of business associates with an eye to network closure as a means of assurance, forming parochial cocoons with few bridging ties between them (Baker and Faulkner 1993; Morselli 2005). Historical accounts of mafia families as localized and parochial groups of “peasant entrepreneurs” fit such accounts (Anderson 1965; Blok 1974).

## 1.2 Institutional Incentives for Closure

Rather than attributing the possibility of economic exchange amongst mafiosi to their individual capability for violence or to an imagined degree of ingrained trust, then, a more robust explanation should start from the observation that mafiosi intendedly developed particular institutional mechanisms—standards, rules, norms, and customs—meant to provide a measure of assurance where trust is otherwise scarce (and likely unwarranted). These mechanisms share a common emphasis on the production of *institutional closure* and the regulation of access to mafia-controlled resources. They are institutional in that they comprise rules of the game that govern behavior across groups, cities, and even countries.

Institutional closure within the mafia family has three key elements. The first is *ethnic closure*—only full-blooded Italians are permitted membership, providing a foundation of homophilous similarity among mafiosi from different families. A non-Italian could never become a “made man,” the importance of which lies partly in that a made man could not be killed (in principle) without direct permission from the boss of the family. While the origins of the rule of ethnic exclusion itself are not entirely clear, perhaps the likeliest explanation is that American mafia leaders simply felt impelled to maintain the definition of the mafioso as full-blooded Italian because this was how it had been in Italy; though, of course, it also reinforced the self-serving mythology of the mafioso as a “man of honor” fundamentally different from the common criminal (Gambetta 1993).

The second is *organizational closure*—mafia families, though loosely defined, create internal labor markets that incentivize in-group fealty; advancement up the mafia hierarchy thus depends on demonstrations of loyalty to the group. While assuaging the assurance problem in transactions within the family, this internal career ladder simultaneously reduces the incentives for brokerage across groups, since mafiosi whose network ties place them at the interstices of multiple groups might be viewed as suspect from within their own group. Organizational closure also implies that members of one mafia organization will be regarded as outsiders by other organizations, thus increasing the individual mafioso’s dependence on the patronage of his home family.

The third is *kin closure*—mafia families grow out of actual families and are often organized around kinship clusters. The closure of the kinship group in turn provides a foundation for multiplex relations and enforceable trust (Peng 2004).

At the individual level, there are likewise added costs to exchange with associates outside the family’s protective canopy. In clan-like groups that emphasize commitment and loyalty, first, there is a potential *reputation cost* to doing too much of one’s business with outsiders (Xiao and Tsui 2007). There is also an *opportunity cost*—time and effort spent cultivating one relationship implies foregone opportunities to cultivate others. To the extent that ranks (and the resources associated with them) were distributed by way of internal labor markets within families (Gambetta 1993), we should expect greater return on one’s social investment from interactions within the family boundaries.

In light of such factors, closure among mafiosi can be understood not as a result of moral compulsion or blind collectivism but rather as a rational expenditure of one's social and economic capital in order to compete successfully for recognition in the family hierarchy. Despite this, Reuter (1983) and other observers have noted that longer-range ties of criminal association were not uncommon. How do we explain the fact that mafia groups are simultaneously parochial and yet combine to form a cohesive and well-integrated network? The solutions to this puzzle are encoded in the network structure, which aggregates the choices made by individual mafiosi concerning who to do business with and who to (either explicitly or implicitly) avoid. The formation of network ties virtually always carries socioeconomic consequences and thus involves some degree of strategy (Burt 1992). Yet, these consequences are unusually acute for the mafioso, for whom the choice of partners not only affects access to valuable social capital in the form of information, monitoring, and resources, but could also be a matter of life or death.

### **1.3 Accounting for Interfamily Exchange**

The standard mafia racket (i.e. the provision of “protection”) featured centralized control: individual mafiosi gained access to the racket—a license to operate—by way of patronage from their more powerful superiors within the family (Paoli 2003). As noted by economist Peter Reuter (1983), however, other mafia industries were comparatively open and decentralized. For the typical mafioso, these decentralized

industries provided both unique requirements and opportunities that fostered exchange across otherwise rigid organizational boundaries. At the macro level, this dynamic resulted in the bottom-up emergence of a cohesive and integrated interorganizational network linking together rank-and-file mafiosi located in families across the United States. In contrast to the more common image of interorganizational coordination occurring through clandestine meetings of elite Mafia leaders, the mafiosi forming these network bridges to other families were often those *excluded* from the most powerful positions within their own families.

The production and distribution of narcotics represented the most notable and historically important example of a highly decentralized industry featuring participation from many rank-and-file mafiosi but much fewer bosses and other mafia elites, largely because it was held in poor regard by traditional mafia leaders (Gambetta 1993; Maas 1969). The crucial distinction was apparently not in who benefited from the trade but rather in who assumed the costs of doing business. In his memoirs, Valachi reports that the standard norms of patronage still applied, as he was forced to provide both his capo and boss with their standard cut (“vig”) once they discovered his involvement in a drug deal. If Valachi were arrested while dealing in drugs, however, the family would not have provided him with legal representation, which was otherwise understood to be a standard benefit of membership in a mafia family (Maas 1969). Similarly, if Valachi were to find himself in conflict with a member of another family as the result of a deal gone awry, the boss would not aid in dispute settlement.

Despite the taint of illegitimacy, a virtual army of mafiosi moved into the drug trade, forming distribution channels that stretched across familial, regional, and even national boundaries (U.S. Senate 1963). This national distribution network is depicted graphically in Figure 1.1. Heroin imported from Canada and Europe flowed from New England or upstate New York to the Five Families of New York City, from where it could move to Cleveland, Detroit, New Orleans, Houston, and other locales where distribution would then be controlled by local criminals.

Discussed in much greater detail in Chapter 4, the midcentury drug trade is useful here as an existence proof that interfamily exchange was not limited to bosses and other mafia elites. It also illustrates a broader point about the autonomy of the mafioso, who was in principle free to do business with whomever he chose, whether inside or outside of the family (Abadinsky 1983; Gambetta 1993; Maas 1969; Paoli 2003; Reuter 1983). To the extent that the mafia family can be usefully compared to a firm, the mafioso is less an employee than a client. As such, he depends on the family hierarchy for resources and patronage but otherwise has relative autonomy in his business dealings (Haller 1992) .

Yet, there were practical limits to this autonomy. First, families featured *patri-monial organization*—they maintained monopolistic control of property and administered privileged access through personalistic patron-client ties (Collins 1975). Within the family, one's access increased with rank in the group hierarchy. Second, these ranks were allotted through *internal labor markets* where one moved up the ladder by currying favor with the group leadership, usually with ostentatious displays of

[illegible]

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loyalty (Gambetta 1993). Finally, the family identity was *greedy*—while the mafioso could do business with members of other criminal outfits, he could only enjoy the full benefits of membership in one family (Coser 1974). By thus internalizing and restricting the distribution of resources to group members, mafia families sought to ensure undivided commitment and obeisance among their members.

As suggested by Figure 1.1, however, the key task is not to explain *whether* cross-family exchange among rank-and-file mafiosi existed but to account for *how* such exchange was organized. Answering this question requires us to go beyond the usual frame of network analysis, in which network structure is typically viewed as an independent variable given *a priori* to explain another outcome of interest. Here, we must instead begin with a theoretical model of individual behavior, which can then be extended to explain the resulting network structure.

If the case of the mafia drug trade most vividly illustrates the puzzle of network integration across otherwise parochial and closed organizations, it also helpfully points us toward the solution to this puzzle. Like economic actors in other contexts, the mafioso has to negotiate a particular tension: To pursue opportunities for advancement and enrichment *within* the boundaries of the larger organization or to pursue entrepreneurial opportunities *outside* of the organization. In other organizational contexts (see Sørensen and Sharkey 2014), this choice typically involves choosing between continuing one’s career path as an employee within an organization or selecting into self-employed entrepreneurship, where this choice hinges in turn on the extent to which better opportunities for advancement can be found outside the organiza-

tional hierarchy. The mafioso can similarly be seen as choosing between focusing on advancement through the industries or rackets controlled by his family (the path of the *organization man*) versus pursuing extra-organizational opportunities (the path of the *entrepreneur*). As touched on above and elaborated further in Chapter 4, the drug trade belonged to this second category.

This behavioral model—which sees the mafioso as negotiating tradeoffs between internal (intra-organizational) and external (extra-organizational) opportunities—focuses our analytical attention in two ways. First, to the extent that individual mafiosi having extensive network ties beyond the boundaries of their own family suggests a focus on external rather than internal reward (namely, by focusing one’s social capital outside the organization), explaining what types of individuals tended to form such externally focused networks should feature prominently in any theory of network integration. Second, this theory should account for individual participation in the drug trade—the key example of an industry that both lacked top-down organizational control and required extensive connection across geographic and organizational boundaries.

Based on this model, I turn now to the identification of theoretical mechanisms which might account for these patterns. These mechanisms focus specifically on organizational- and individual-level factors determining what types of actors were well-positioned to benefit from advancement within the organization or, instead, to find greater opportunities for advancement outside the family-centric industries and networks.

## 1.4 Theoretical Mechanisms

The network positions available to different actors in a particular context can be explained by corresponding patterns of *institutional closure*. In the Weberian tradition, closure is defined as “the process by which social collectivities seek to maximize rewards by restricting access to rewards and opportunities to a limited circle of eligibles” (Parkin 1974, p. 3; also see Weber 1978).<sup>3</sup> This process of restricting access to group-controlled resources to a defined group of insiders has implications for network structure. Namely, if access to key resources is limited to group members and one’s degree of access increases with rank or position within the group, the incentives for intergroup brokerage are low among those who would instead prefer to attain high status (and privileged access) in their own group. Rules and norms that institute Weberian institutional closure, in other words, also tend to produce network closure, defined as the absence of bridging connections between parochial groups. There need not be formal sanctions involved for this tendency to hold. Indeed, perhaps the most salient danger associated with brokerage activity is simply the risk of judgment from other group members who may question one’s intentions, motivations, and commitments (Xiao and Tsui 2007).

By distinguishing insiders from outsiders and placing a premium on insider status, institutional closure also produces *status heterogeneity*. This heterogeneity can

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<sup>3</sup>The institutional closure described here is often referred to more broadly as “social closure” in the literature on professions and occupations (e.g. Parkin 1974; Weeden 2002). I use the former rather than latter term to distinguish from the network usage of “social closure” in reference to the presence of closed triads.

in turn induce actors to pursue different positions in a network of exchange relations depending on whether they carry the mark of “belonging” to the group. In organizational fields where multiple closed groups adopt similar standards of membership, exclusion from one group can imply exclusion from all others, while inclusion in one group can preclude inclusion in any others. In such cases, “outsiderism” is two-tiered. The “conditional outsider”—who belongs to one group and is therefore excluded from others—is incentivized to stay within her group in order to remain in good standing. However, institutional closure also defines “unconditional outsiders” who cannot belong to any group. This unconditional outsider is then left with two options: to either operate at the margins of one group or to act as a bridge between groups. The role of client to a single group is inherently insecure because it lacks the structural autonomy that comes from having ties to diverse actors (Bothner et al. 2010). Therefore, the enterprising outsider may instead pursue a path of *entrepreneurial deviance*, using her lack of membership in any particular group to her advantage by seeking out brokerage positions bridging otherwise disconnected (or only loosely connected) groups (a topic taken up in more detail in Chapter 3) or by sorting into alternative “private orders” where exchange can take place outside the regulating eye of the organization (the topic explored in Chapter 4).

These three interrelated mechanisms—*institutional closure*, *status heterogeneity*, and *entrepreneurial deviance*—together account for a historical conundrum: That the American Mafia was simultaneously a well-integrated national conspiracy and yet comprised of largely local, parochial, and closed groups. Far from reflecting top-down control by powerful mafia bosses, I argue that the integrative bridging ties formed by

outsiders and marginal actors allowed for coordination and collaboration across mafia families that otherwise had few ongoing connections to one another. Consequently, what contemporary law enforcement and political figures saw as the residues of a national “mafia conspiracy” was less a reflection of formal coordination between families than of bottom-up entrepreneurial activity. Paradoxically, this bottom-up activity allowed mafia families in cities across the United States to become linked into a cohesive national network precisely because of their failure to regulate the behavior of their members. Against social norms emphasizing closure and local solidarity (Gambetta 1993), rank- and-file criminals formed diverse and wide-ranging networks because doing so benefited their own attempts to profit from criminal activity.

The interplay of these three mechanisms also informs and challenges broader theories of networks and institutions. Network theories have often explained cohesion and integration as emerging as a byproduct of individual brokerage activity linking together otherwise unconnected actors and groups. In Burt’s classic theory of “structural holes,” the incentives for individual actors to perform such brokerage activity are implicit and inherent—since brokerage forms the foundation of social capital (e.g. Burt 1992, 2000, 2004, 2005, 2012), agentic actors will seek to position themselves as brokers. In contrast, the interplay of the three mechanisms described above positions brokerage as one element in a division of network labor, and one that is incentivized and rewarded for particular types of social actors rather than pursued in zero-sum competition.

The reason is that institutional closure, designed to discourage opportunism and

incentivize fealty to the group, positions the broker as a potentially deviant and untrustworthy actor. The avoidance of brokerage thus has an isomorphic quality, with actors competing to appear committed to group norms and therefore legitimate (e.g. DiMaggio and Powell 1983). Far from ensuring *uniformity* of behavior, however, the interplay of these three mechanisms here instead implies a *heterogeneity* of behavior as normative and competitive pressures are experienced differently depending on an actor’s social position relative to the group. The same rules and norms that encourage closure and parochialism among insiders create opportunities for brokerage and integration by outsiders operating beyond the normative constraints of group membership. Whereas institutional theory typically begins from the analysis of norms, rules, and standards as constraints on individual agency, these same elements also create opportunity structures for actors who find themselves defined as outsiders or marginal figures within the institutional ecosystem.

## 1.5 Outline of Dissertation

To study the structure of economic and social relationships among mafia criminals, I collected an archival data set—based on information compiled in 1960 by the Bureau of Narcotics—featuring biographical details for more than 700 mafia members and associates operating in various American cities, including a list of each member’s known criminal associates. Chapter 2 introduces this unique network data set and describes the key properties of the resulting structure. I show that the American

Mafia was comprised of a set of separate yet also strongly intertwined islands of criminal activity. Even though most mafia criminals only worked with other criminals in the same city and family, a mafioso in San Francisco could still reach one in Providence or Tampa through just a few degrees of separation. What explains this paradox? Consistent with “small-world” network theory (Watts 1999; Watts and Strogatz 1998), I demonstrate that a small number of network bridges between otherwise disconnected groups was sufficient to drastically reduce the social distance between different islands of criminal activity.

Given the need for localism and closure in order to make trust enforceable—combined with the career benefits of undivided commitment to the family and the potential risk of appearing disloyal—where did the bridging ties necessary for producing cohesion across mafia organizations come from? Addressing this puzzle, Chapter 3 analyzes the correlates and consequences of network brokerage at the level of individual criminals. I document a division of network labor in which a small number of brokers—often, surprisingly, ethnic outsiders excluded from formal membership—acted as bridges across the different regional islands of criminal activity. Furthermore, I show that ethnic outsiders and marginally positioned Italian criminals—but not others—held power and influence within families especially when they were positioned to act as bridges between families. In sociological theorizing, social closure in solidary groups is typically thought important because it places a heavy premium on insider status and excludes outsiders from access to key resources. Yet, this analysis shows that social closure can also paradoxically increase the returns to brokerage, albeit only when taken up in a way that does not violate group norms.

This argument speaks to a tension between two longstanding lines of theorizing in the social sciences. Network theorists, on one hand, emphasize the importance of diverse affiliations that bridge gaps between otherwise disconnected groups; these diverse ties are viewed as the foundation of power, influence, and social capital (Burt 1992, 2004; Fernandez and Gould 1994; Granovetter 1973; Padgett and Ansell 1993). When access to key resources depends on good standing within a closed group, however, individual actors who maintain bridging ties beyond the group’s boundaries may be viewed with suspicion rather than rewarded for their diversity of interests (Podolny and Baron 1997; Stovel and Shaw 2012; Xiao and Tsui 2007). While individuals may benefit opportunistically from chances for brokerage across group boundaries, furthermore, the power and influence they gain may come at the expense of other group members. Consequently, organizational theorists generally emphasize institutional closure—norms, rules, and regulations that restrict the flow of resources to insiders of a closed group—as the means through which groups make loyalty and undivided commitment attractive to members and thereby discourage opportunistic behavior that might weaken the group as a whole (Coser 1974; Parkin 1974; Weber 1978). I bridge these arguments by showing that institutional closure—in this case, rules and norms that mafia families used to regulate membership and ensure loyalty among their members—can enable diverse brokerage activity among outsiders even as it restricts the same activities among insiders.

In addition to exclusion from family membership, competition *within* families also indirectly birthed opportunities for inter-family exchange. Chapter 4 examines the case of the mafia drug trade. Since the drug trade required coordination across



regional and even national boundaries, it was a major source of network cohesion. Yet, the organization of the drug trade differed in important ways from other mafia rackets. Since involvement in narcotics was formally discouraged by many of the most powerful bosses and mafia elites, the industry lacked top-down regulation. Despite this taint of illegitimacy, the drug trade featured broad-based participation by the 1950s. While this is often intuitively viewed as evidence that mafia families lacked formal organization, I suggest the opposite.

Sicilian mafia families had generally been small in membership and forced to compete against dozens of rival factions even within the same city or regional territory (Gambetta 1993). In contrast, the American Mafia featured a smaller number of families—generally one per city—with larger memberships and monopoly control over a larger region of operation. While this engendered competition for positions of influence within the family hierarchy, it also drove excluded and relatively more marginal members into nominally deviant activities such as the drug trade—disapprovingly viewed as an especially dirty business by the most influential mafia bosses (Gambetta 1993; Maas 1969). This analysis crystallizes the dissertation’s broader empirical argument: More than coordination among bosses and other elite criminals, it was entrepreneurial action by marginal and excluded actors—outsiders operating largely beyond the control of mafia organizations themselves—that generated the integrated and highly connected mafia network.

## CHAPTER 2

### THE SECRET SOCIETY AND THE SMALL WORLD

A long line of research on criminal and covert networks has emphasized the critical tradeoff between efficiency and security (Baker and Faulkner 1993; Erickson 1981; Morselli et al. 2007). On one hand, efficient communication across network structure—facilitating timely collective action—depends on low average path lengths, meaning that most nodes can be reached from others either directly or through just a few intermediaries. On the other hand, the integrative ties enabling such efficiency can also make the network less secure when one “discovered” node can easily lead to the discovery of many others.

While previous work has generally analyzed this tradeoff in the context of networks surrounding individual criminals, covert organizations, or conspiratorial incidents (e.g. Baker and Faulkner 1993; Campana and Varese 2013; Morselli 2005; Morselli et al. 2007; Papachristos and Smith 2014), the same logic of efficiency and security can be applied to the organization of relations *across* criminal organizations. To this end, this chapter draws on a unique database compiled in 1960 by the Federal Bureau of Narcotics containing biographical information on 726 prominent members and associates of Italian-American mafia families operating in the United States. Using organizational charts produced by contemporaneous U.S. Senate investigations—together with label propagation techniques from computer science to fill the gaps in the historical record—I map the individual criminal profiles onto membership in 24 mafia families. Based on ties of criminal association identified in these profiles, I

produce a novel network image of the mid-century American mafia as a set of highly differentiated yet intertwined islands of criminal activity.

In making this empirical advance, I theoretically extend the efficiency-security tradeoff to the analysis of inter-organizational relations through the concept of network *modularity* (Newman 2006; Newman and Girvan 2004). While some criminal industries—such as the distribution of narcotics—require coordination across geographic space, the extensive network ties required for such coordination may make the network less secure by allowing the discovery of any one conspirator to implicate multiple organizations. Yet the absence of bridging ties between organizations makes intergroup coordination impossible or, at the least, inefficient. Capturing this balance, modularity measures the fraction of network ties occurring *within groups* compared to the fraction one would expect in a randomly constructed network of the same size and degree distribution. Thus, high modularity in an inter-organizational criminal network suggests a stronger emphasis on organizational security rather than transactional efficiency.

The analysis finds that the mafia network featured extremely high levels of clustering by group or family. Following the logic of Watts and Strogatz’s (1998) “small-world” theory, however, it also turns out that a relatively small number of “bridging” connections was sufficient to ensure relatively low average path length between members of different families. While this structure is broadly consistent with previous observations of criminal networks (e.g. Morselli 2009b), the key is to identify the criminal “brokers” who link together the disparate clusters by form-

ing bridging ties beyond their own group (e.g. Baker and Faulkner 1993; Klerks 2001; Krebs 2002; Natarajan 2006; Morselli 2009a,b; Bouchard and Nguyen 2010; Bright et al. 2012, 2015; Calderoni 2012; Mancuso 2014; Papachristos and Smith 2014; Mastrobuoni 2015). To this end, I show that—rather than widely dispersed—the key network bridges were disproportionately concentrated among relatively few actors. Furthermore, I find that the occupancy of such inter-organizational brokerage positions features a U-shaped correlation with status and centrality *within* organizations, suggesting that brokerage roles were generally taken either by especially low- or high-status—but not middle-status—actors. This apparent pattern of “middle-status conformity” (Phillips and Zuckerman 2001) in the occupancy of brokerage positions sheds important light on the potential mechanisms allowing for interconnection between criminal organizations. In particular, to the extent that brokerage is avoided by middle-status members of a criminal group, we might suspect that inter-organizational integration reflects individualistic enterprise—and even a form of deviance from group expectations—rather than group-level coordination.

In relation to the rest of the dissertation, this chapter (based closely on DellaPosta 2017) has a twofold purpose. The first goal is to introduce the data and methodological apparatuses that will act as the workhorses for subsequent analysis. The second goal is to give a synthetic descriptive view of the network structure of the American Mafia. Subsequent chapters will explore in greater detail the mechanisms that gave rise to this structure.

The remainder of the chapter proceeds as follows. The next section provides

theoretical motivation of the mechanisms underlying the tradeoffs between efficiency and security and between intragroup cohesion and intergroup connectivity in criminal networks. Then, after some brief historical and empirical background for the present study of mid-20th century American mafia families, I will introduce an archival dataset that allows us to re-create the network of relations within and between these families. The subsequent sections will present results from three sets of network analyses. The first analysis uses the concept of network modularity to demonstrate the extent to which intrafamily closure dominated the American mafia's network structure. The second analysis shows that, despite such closure, the national network was nonetheless marked by high intergroup connectivity and integration. Taking up this puzzle, the third analysis shows that this integration was enabled by a *division of network labor* in which intergroup bridges were disproportionately maintained by a relatively small number of actors, and that the occupancy of such bridges was nonlinearly correlated with one's status within the family hierarchy. I then conclude by briefly summarizing the chapter.

## 2.1 Secrecy, Trust, and Closure

Erickson (1981) defines a *secret society* “in social network terms as a persisting pattern of relationships which directly or indirectly links the participants in related secret activities” (p. 189). Baker and Faulkner (1993) describe the *security* imperative in such covert networks thusly: “When a secret society works properly, the larger society remains unaware of its existence. If a secret society is discovered and

investigated, its organizational structure should offer protection by making it difficult to unravel the conspiracy” (p. 843). The imperative for *efficiency* in the structure of such networks is that the pattern of relationships linking members together must enable them to communicate and coordinate for whatever purpose (e.g. carrying out a planned attack or consummating an illegal transaction) the network exists. As Morselli et al. (2007) put it: “At some point, the hidden group must step forward and execute a crime” (p. 144).

Security in the covert network can be enhanced through both top-down and bottom-up mechanisms. In his classic essay on the subject, Simmel (1950) highlights top-down organizational features that help to keep the “secret society” secret. Chief among these is a rigid hierarchy that de-individualizes particular members and insulates leaders from the rank-and-file. In addition to socializing members into the group and its purposes (a process that is also often aided by elaborate initiation rituals), limitations on direct communication among members also ensure that the discovery of any one member is unlikely to lead to the discovery of many others (Baker and Faulkner 1993). Thus, covert networks are often thought to be sparse and decentralized in structure.

Erickson (1981) emphasizes on-the-ground conditions that lead individual members of the secret society to build networks aimed toward trust and closure rather than openness and integration. Based on a comparative analysis of six cases—including the Lupollo mafia outfit chronicled by Ianni and Reuss-Ianni (1972)—Erickson highlights variation in social structure stemming from the riskiness of the conditions faced

by the group. Risky conditions, she argues, make it especially important to rely on pre-existing networks of relationships. With each new member who is recruited to the secret group, both the *recruiter* and *recruited* are at risk of being exposed and betrayed by the other. Accordingly, recruitment of new members and the formation of new covert ties proceeds along paths of existing relations, where the prior contact between recruiter and recruited provides a measure of trust. Furthermore, the ties most likely to provide this requisite trust are parochial “strong” ties, such as those within kinship groups. Consequently, network ties formed in the context of criminal or covert activity are unlikely to be the “weak” ties that bridge large gaps between distant social groups lacking a previous basis for connection (Granovetter 1973).

In the context of criminal networks spanning multiple organizations, Erickson’s (1981) argument for heavy reliance on strong ties and pre-existing relations suggests that members will be especially likely to focus on building ties within—rather than across—organizations. There is a transaction cost to identifying trustworthy partners for exchange outside of one’s own group. Within the organization, dense social networks and hierarchical authority can combine to discourage malfeasance and ensure conformity to group expectations. Beyond these organizational boundaries, however, one must increasingly rely instead on interpersonal trust lacking such built-in assurances.

For these reasons, we should expect an inter-organizational criminal network to feature a strong bias toward *social closure* in which intra-group connections dominate the network’s structure. This closure can decrease the efficiency of the network when

members of one group are foreclosed to communication and potential coordination with individuals in other regions of the network. In extreme cases, individual groups might appear in the network as “caves” disconnected from others. Perhaps more likely, they can resemble a chain of islands with high internal cohesion balanced by a modest number of bridges linking the groups together. The task of this chapter is to describe—and begin to explain—this balance between closure and integration in the context of a geographically widespread inter-organizational criminal network.

## 2.2 Reconstructing the Mafia Network

I began this dissertation by recalling the political and scholarly debate that emerged from early investigations, mostly carried out under the auspices of U.S. Senate committees, into the existence, activity, and structure of Italian-American mafia families.<sup>1</sup> These initial volleys formed the foundation for two emergent theoretical camps, positing either *bureaucratic* organization—emphasizing hierarchical structure and centralized control (e.g. Cressey 1969)—or *patrimonial* organization—emphasizing loose patronage structures rooted primarily in kinship and other local relationships (e.g. Ianni and Reuss-Ianni 1972)—as the foundation of social and economic structure in Italian-American organized crime.

Subsequent investigation—including the published confession of New York mafioso Joseph Valachi (Maas 1969)—refined the bimodal arguments. On one hand,

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<sup>1</sup>For more examples of this early debate, see Anderson (1965), Cressey (1969), Albin (1971), and Gallhier and Cain (1974).



Daniel Bell was correct in disputing the existence of a single “functioning organization” controlling American-Italian organized crime in all major cities. Valachi described a much less centralized structure comprised of many independent criminal organizations, more commonly termed “families.” Each family was generally governed according to an internal hierarchy that usually featured a boss, several *caporegimes* (captains), and soldiers reporting to a *caporegime*. The simplest evidence that these families did not comprise a single overarching organization is that one could not simultaneously be a member of multiple families.

Like their Sicilian progenitors, however, American families formed a loose confederation based on mutual recognition (Paoli 2003). One of the earliest pieces of evidence for some degree of national coordination came in 1957 when federal officers raided a farm in Apalachin, New York, where more than 50 prominent mafiosi from locales as far-flung as Tampa, Los Angeles, and Denver had assembled for a national meeting. Valachi later attested to the existence of a national Commission on which the most prominent mafia bosses in the United States sat. In fact, this Commission had existed since at least the 1930s, two decades before a similar body first emerged among Sicilian families (Maas 1969; Paoli 2003). Though often misconstrued as a “board of directors” or ruling council imposing organizational unity across mafia families, the Commission’s main function was apparently that of an informal conduit allowing bosses to coordinate joint ventures, mediate disputes between families, report on the initiation of new members, and foster exchange with counterpart families in Sicily and southern Italy (Abadinsky 1983). In his published memoirs, New York boss and former Commission member Joseph (Bonanno 1983) wrote that the

Commission had no formal mechanism to impel compliance, but rather “had respect only insofar as its individual members had respect. More than anything else, the Commission was a forum” (p. 159).

Network analysis of the relationships both *within* and *between* families offers a promising avenue for further investigating the balance between bureaucratic and patrimonial organization—and, more broadly, between networked interconnection and local closure—in the American Mafia. In taking this approach, the present chapter builds on previous work investigating mafia networks in Europe (e.g. Berlusconi 2014; Calderoni 2014; Scaglione 2011; Varese 2006) and the United States (e.g. Mastrobuoni and Patacchini 2012; Mastrobuoni 2015; Papachristos and Smith 2014; Smith and Papachristos 2016), as well as previous work on inter-group relations in criminal networks more generally (Malm et al. 2011; Malm and Bichler 2011). Most importantly, this previous work emphasizes the degree to which network structure in organized crime conforms entirely to neither bureaucratic nor patrimonial modes of organization, but is rather contingent, variable, and fluid depending on circumstance (also see Lombardo 1994).

Using data contained in an unusually detailed dossier compiled in 1960 by the Bureau of Narcotics, I reconstruct the network of criminal association among prominent members and associates of all known mafia families operating in the United States during the mid 20th-century heyday of American organized crime. While only 50 copies of the dossier were originally produced (and none intended for public consumption), it was declassified and published in mimeographed form in 2007 (Bureau

of Narcotics 2007). The dossier compiles criminal profiles for known mafia members and associates in the first large-scale attempt—following a decade of congressional hearings and dawning public awareness—to aggregate all that was known about the various mafia groups operating across the United States at the time.

The profiles themselves have a straightforward and relatively standardized format. Each contains summary sections on demographic background (including date and place of birth), geographic residence, known relatives, past criminal record, and involvement in legitimate businesses (including non-criminal professional or occupational affiliations), as well as a list of known criminal associates and a brief synopsis of the individual’s role in mafia affairs. All of the profiled individuals were alive as of 1960, although hand-written notes in the margins sometimes report deaths that occurred in 1961 or 1962.

Each profile includes a list of the person’s known criminal associates. These ties of criminal association are different from ties of direct communication gathered through wiretaps and similar records. Rather than focusing on any single instance of communication, the ties of criminal association are meant to capture the broader array of relationships facilitating collaboration in criminal affairs among mafiosi. They also reflect the local knowledge of investigators, since the Bureau of Narcotics in particular was known to have undercover operations in major mafia families (Maas 1969).<sup>2</sup> As pointed out recently by Agreste et al. (2016), reconstructions of mafia

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<sup>2</sup>Despite the Bureau’s nominal emphasis on the drug trade, furthermore, longtime director Harry Anslinger’s investigative interest in the mafia dated to the 1930s and extended well beyond mafia involvement in narcotics (see McWilliams 1990 for a comprehensive institutional history of the Bureau of Narcotics). Information collected by the Bureau led to several major law enforcement

networks from wiretaps and related communication records—despite the many insights gleaned from such studies—are limited by the fact that the criminals known to rank most highly in the organization seldom appear most centrally in the communication network. This is not the case for the network of criminal association studied here, in which bosses and other high-ranking mafia leaders consistently occupy more central roles in the network. Still, we should be cognizant of the many ways in which the source of criminal network data can impact the resulting structures (Rostami and Mondani 2015). To this end, one apparent benefit of the Bureau of Narcotics data set is that its ties of criminal association clearly draw from a combination of available information from intelligence and investigations, criminal co-offending, and even collaboration in legal enterprises, thus lessening the risk of “missing” important connections.<sup>3</sup>

One expects, as with virtually all data sources, that the information in the dossier is subject to occasional error. There would be graver concern if data were inaccurate or missing in a manner that is systematically related to the key predictors or outcomes of interest. From the available evidence, there is little reason to believe this to be the case. Still, the individuals profiled by the Bureau of Narcotics were not a random sample of those with any degree of mafia involvement—instead, they were

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coups during the 1950s—particularly the successful raid of the 1957 national mafia meeting in Apalachin, New York. Another indicator of the Bureau’s contemporary influence is that other written documents from the time period seemingly relied on Bureau-provided descriptions when available; for example, journalist Peter Maas (1969, p. 238) can retrospectively be found quoting directly from the then-unpublished dossier in *The Valachi Papers* when describing Pasquale Pagano, one of mafioso-turned-informant Joseph Valachi’s acquaintances.

<sup>3</sup>As pointed out by Rostami and Mondani (2015), however, there are other biases that might remain, particularly those stemming from anchoring and “halo” effects.

individuals thought to be important or influential in mafia affairs. This non-random selection would mainly be a concern if figures excluded from the dossier were in fact well-integrated in the mafia network. Though this cannot be entirely ruled out, circumstantial evidence suggests that it is unlikely. While there are cases in which individuals with no profile of their own appear in a profiled mafioso's list of associates, in nearly all such cases the un-profiled individual did not appear in any *other* profiled mafioso's list. In most of the remaining cases, further investigation revealed that the un-profiled individual was recently deceased or had otherwise retreated from active mafia affairs by 1960. Similarly, while the lists sometimes include redacted names, these redactions apparently target (as one would expect) individuals who are not themselves profiled in the dossier.

In previous work, Mastrobuoni and Patacchini (2012) have independently introduced and analyzed the American mafia network as reconstructed from the Bureau of Narcotics dossier (also see Mastrobuoni 2015). Among other findings, they show that the most central mafiosi tended to be those who were older, Sicilian born, connected to diverse illegal and legal enterprises, and tied to other mafiosi through intermarriage and kin relations. While this analysis has many merits, it only indirectly addresses the question of closure and integration *across* mafia families. Indeed, Mastrobuoni and Patacchini (2012) explicitly show that the ties of intermarriage focused upon in their analysis appeared to solidify alliances within already-established network clusters rather than bridging larger distances and producing network integration (p. 34). More crucially, Mastrobuoni and Patacchini (2012) do not explicitly map individual mafiosi to the family organizations to which they belonged, meaning that their anal-

ysis does not directly analyze interorganizational network structure. In contrast, I approach this question directly by drawing on both historical sources and computational induction to map individual mafiosi to the known mafia organizations with which they were affiliated, and then analyzing the resulting structure of relations across these organizations.

I first generate the network of ties between mafia criminals by linking any two individuals connected by a tie of criminal association. Since “association” implies a bi-directed tie, I do not require that *both* individuals appear in the other’s list; rather, any two individuals are tied if one appears in the other’s list of criminal associates. As discussed more extensively later, the asymmetry in which person A appears in person B’s list but B does not appear in A’s list usually reflects the dossier creators’ attempts to prioritize associates based on the closeness of the tie or the relative importance of the person being listed. I exclude from the network 19 “isolates” lacking ties of criminal association with any other profiled criminals. This leaves a network of 707 U.S.-based mafiosi with 2,801 total ties among them and an average degree of 7.92.<sup>4</sup> The network is well-connected: All but five mafiosi are contained in a single large connected component in which any node can be reached from any other.

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<sup>4</sup>The non-U.S. mafiosi in the dossier were generally international drug traffickers or deportees who at one time resided in the U.S. Despite ties to some American mafiosi, however, exploratory analysis suggested that the non-U.S. mafiosi constituted distinct groups and therefore should not simply be considered associates of American mafia families. Gambetta (1993) quotes from a North American mafioso who explains: “If [someone] lives [in Italy]...he can’t be one of us” (p. 117).

## 2.3 Modularity and Group Closure

Having reconstructed the network of ties between individual mafiosi, the next task is to match each individual to an affiliated mafia family. Since mafiosi could only belong to one family, furthermore, these inferred memberships must be exclusive. Historical and archival sources suggest that the number of independent mafia families operating in the United States has generally varied between 20 and 30 (Maas 1969; Paoli 2003; U.S. Senate 1988, 1963). I identify 24 such groups with at least one affiliate in the Bureau of Narcotics dossier.<sup>5</sup> Individuals are linked to families using a combination of archival sources and computational induction. The Bureau dossier generally describes each mafioso’s family affiliation in terms of geography (e.g. as a member of the “Detroit mafia group”). While sufficient for inferring family membership in most cases, geographic categorization fails when multiple mafia families occupied the same city or region. The notable examples are New York City, which had five mafia families, and Miami, which was an open territory featuring mafiosi from several different families. For such cases, I first supplemented information from

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<sup>5</sup>Estimates can vary based on the classification of smaller mafia outfits as either independent families or subsidiary “crews” of another family. I have made several coding decisions in this regard. First, I include mafia affiliates from the Rochester and Utica-Rome areas of New York as part of the Buffalo family. Rochester was only regarded as an independent family in later years. While the Utica-Rome faction seems to have operated with some degree of autonomy, the faction leader was usually regarded as a capo in the Buffalo family rather than an independent boss. Following evidence presented in Joseph Valachi’s U.S. Senate testimony (1963), I code the Newark group as a faction of the Genovese family. While the Springfield, I.L. group is sometimes regarded as a faction of the Chicago family, I code it separately based on Valachi’s categorization of Springfield leader Frank Zito as a mafia boss and by the fact that Zito represented himself independently at the 1957 Apalachin meeting (Maas 1969). Also, while historical accounts say little about the Omaha group, I have coded them as a separate family due to the lack of evidence for any affiliation with other families (in fact, the five-person Omaha group is the only one that does not belong to the same network component as the other 23 families).

the Bureau dossier with several membership lists printed in the proceedings from a 1963 U.S. Senate special committee on organized crime. Most importantly, these charts included the complete known membership lists for the five New York families. Together, archival sources furnished family affiliations for 68 percent of individuals. Following the rule that one cannot belong simultaneously to multiple families, all individuals are matched to one family of primary affiliation.

To assess the extent to which network ties were concentrated within families, I rely on Newman and Girvan’s (2004) measure of *modularity*. Modularity  $Q$  gives the fraction of edges (network ties) that occur within communities (i.e. mafia families) minus the expected fraction of within-community edges in a random network with the same degree distribution. More formally, modularity is expressed as

$$Q = \sum_i (e_{ii} - a_i^2) \quad (2.1)$$

where communities are indexed by  $i$ ,  $e_{ii}$  represents the fraction of edges within community  $i$ , and  $a_i = \sum_j e_{ij}$  where other communities (besides  $i$ ) are indexed by  $j$ . Thus,  $a_i$  gives the total fraction of edges that connect to community  $i$ . In a random network,  $e_{ij} = a_i a_j$ . High modularity indicates that dyadic relations are heavily constrained to occur *within* rather than *across* group boundaries. Among the 478 nodes with known family affiliations, we observe modularity  $Q = .61$ , which indicates a heavy preponderance of within-group ties; generally, networks with  $Q > .3$  are thought to feature strong community structures (Newman and Girvan 2004, p. 8).

On this basis, we can reasonably assign family affiliations for the remaining



229 individuals based on the dominant affiliations among those in their egocentric network—in essence, assuming that one most likely belongs to the family with whose members one most associates. Using Raghavan, Albert, and Kumara’s (2007) “label propagation” algorithm, the network is first initialized such that the 478 individuals with known affiliations are labeled accordingly. Unlabeled nodes are then selected in random order to acquire the label that is most popular among their network alters. This procedure continues until every previously unlabeled node eventually holds the label that occurs with the highest frequency among its alters. In contrast, a purely inductive approach (assigning family affiliations without any *a priori* knowledge) would err by assuming away part of the problem—two or more families with extensive ties to one another could be classified as one group. The approach taken here instead combines extensive prior information on family affiliations with a simple computational method designed to fill the gaps in this prior knowledge.

The label propagation routine produces classification solutions that vary across independent replications due to two sources of stochasticity: (1) the random order in which nodes update their labels and (2) the random breaking of ties between equally popular labels (Raghavan et al. 2007). To ensure robust classifications, I compared many independent replications of the propagation routine; the Rand index of classification agreement for paired networks was in all checked cases higher than .95. (Given the large number of fixed “seeds” with known affiliations, the similarity across runs is not particularly surprising.) For simplicity and robustness, I use each person’s modal family affiliation across 100,000 replications.

Table 2.1 gives membership counts for all 24 families both before and after this procedure. Unsurprisingly, there is wide variation in family size, including several very large New York families (particularly the Genovese, Lucchese, and Gambino families), sizable Midwest contingents in Chicago and Detroit, moderately sized outfits in cities such as New Orleans and Los Angeles, and a number of smaller groups—including the Springfield family with just two identified affiliates—in other locales. As expected, furthermore, the main effect of the label propagation routine is to identify main families of affiliation for New York-based mafiosi whose primary allegiances among the five N.Y.C. families were previously unclear from archival sources.

The mafia network (after label propagation) features modularity  $Q = .56$ , indicating that the network structure is dominated by internally cohesive and externally differentiated closed groups. Notably, this statistic is not dramatically lower than the modularity when only examining the 478 individuals whose family affiliations were inferred from archival sources independent of the label propagation algorithm ( $Q = .61$ ). This confirms that the high level of closure in the mafia network is not simply “baked in” by the label propagation procedure.

Figure 2.1 visualizes this network structure with nodes colored according to family affiliation. In the figure, families are clustered and relatively clearly demarcated from one another. Of course, much of this group closure would seem to reflect geographic proximity. Given the local scope of the protection racket and many other mafia businesses, a high degree of network differentiation among families located in different cities and regions is hardly surprising (Gambetta 1993). However, Figure 2.2 “zooms

**Table 2.1:** Number of mafiosi affiliated with each family before and after label propagation

Family	Before LP	After LP
New York City:		
Genovese	88	152
Lucchese	34	127
Gambino	44	69
Profaci	17	25
Bonanno	13	18
Elizabeth, N.J.	4	4
Buffalo	17	18
Pittston, P.A.	18	19
Pittsburgh	6	6
Philadelphia	13	13
New England	9	10
Detroit	42	47
Chicago	38	42
Kansas City	18	19
St. Louis	11	11
Cleveland	11	19
Springfield, I.L.	2	2
Omaha	5	5
New Orleans	18	20
Tampa	15	16
Dallas	7	7
Colorado	9	9
Los Angeles	24	32
San Francisco	15	17
Total:	478	707

in” to depict network ties only among mafiosi affiliated with the five N.Y.C. families (Genovese, Lucchese, Gambino, Profaci, and Bonanno). Compared to  $Q = .56$  in the larger network, the modularity in this N.Y.C. sub-network decreases to  $Q = .33$ . In the network visual, family boundaries are more difficult to distinguish than in the

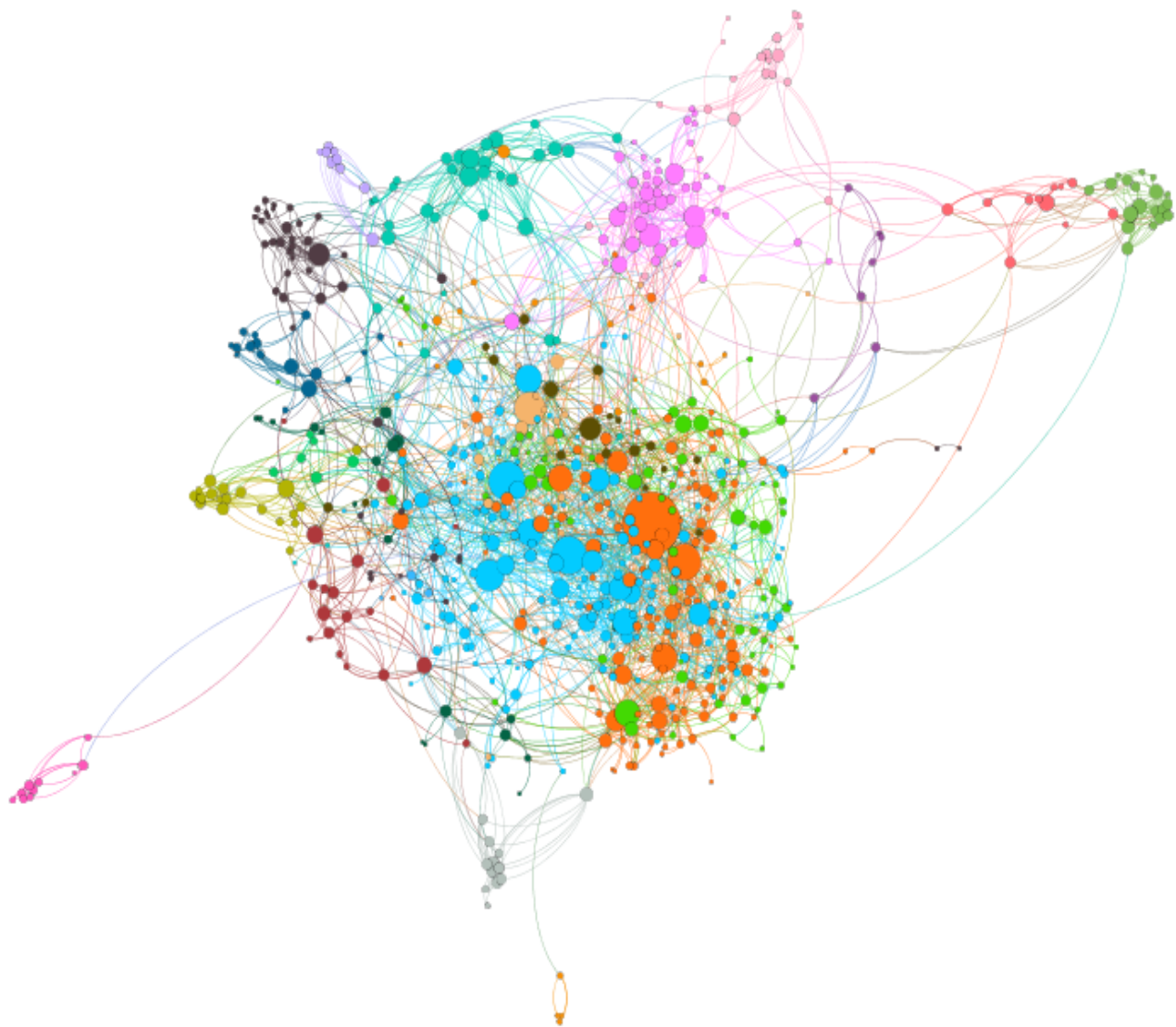
national network. Yet, even within a single city, the degree of network clustering remains relatively high and any given mafioso is much more likely to share a network tie with someone in the same family (I will have more to say about the uniqueness of the five N.Y.C. families in Chapter 3).

## 2.4 Network Integration

Despite the high modularity of the mafia network, the structure nonetheless retains other features associated with the potential for efficient communication and reachability across group boundaries. Figure 2.3 depicts the bridging ties between families. With the exception of the disconnected Omaha cluster, all other families are tied into a single network component. While closeness in the interfamily network often correlates with geographic nearness, even families located on opposite coasts could be linked through bridging ties. One simple measure of network integration would be to find how many nodes can be placed into a single *bicomponent*—defined as a grouping within which any node can reach any other through at least *two* independent pathways. When most nodes fit within a single bicomponent, the network is integrated in the sense that individuals have multiple different ways of reaching those with whom they are not directly connected (Erikson and Bearman 2006). For the mafia network, 94 percent of nodes (665 of 707) fit within a single bicomponent.

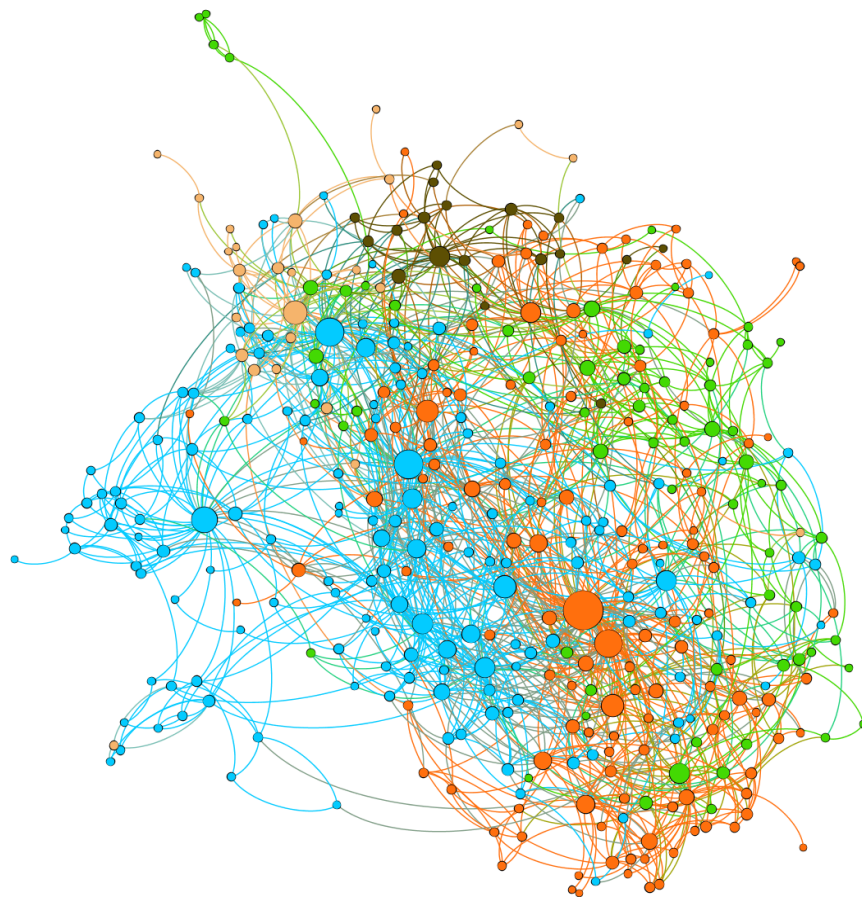
Another indicator of integration and efficiency is the *average path length* of the graph, or the average number of network steps between pairs of nodes. For the mafia

**Figure 2.1:** The American mafia network



*Note: Nodes are colored according to family membership and sized according to degree.*

**Figure 2.2:** The Five Families of New York City



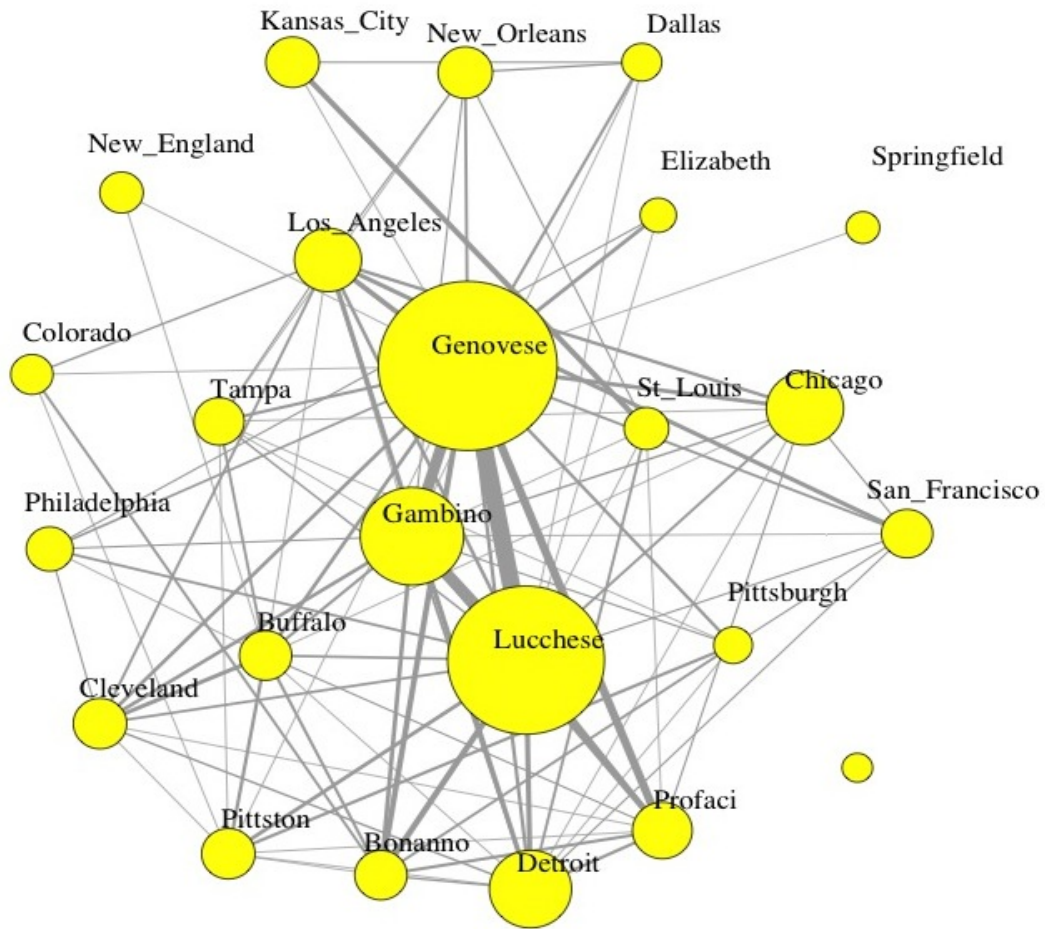
*Note: Nodes are colored according to family membership and sized according to degree.*

network, this quantity equals 3.92, indicating that most pairs of mafiosi—even those operating in different cities and families—were just a few degrees of separation apart in the national network. This combination of high local clustering and inter-cluster connectivity observed in the mafia network is consistent with the small-world network structures famously described by Watts and Strogatz (1998). The co-presence of

these seemingly contradictory properties minimizes the tradeoff between security and efficiency because it provides for both dense local networks in which trust and assurance are likely to be higher (Coleman 1988) and well-integrated networks that keep opportunity costs low by allowing both direct and indirect access to diverse resources located in other network clusters (Burt 1992, 2004; Granovetter 1973).

A more formal test of the small-world properties of the mafia network can be made by comparing the observed network to “rewired” random networks of the same size with regard to two quantities: (a) the *average path length* (APL) between two nodes in the network and (b) the *clustering coefficient* (CC)—defined as the proportion of closed triads (transitive structures in which an A connected to B who is connected to C also implies that A and C are connected)—of the network (Watts 1999; Watts and Strogatz 1998; Uzzi and Spiro 2005). I generated 10,000 simulated random rewirings of the mafia network and compared each of them to the empirically observed structure. Random networks are marked first by low average path lengths, owing to the lack of local clustering. In a small-world structure, however, the APL should not be dramatically higher than in a comparable random network. The average APL across the random networks was 3.40, compared to just 3.92 in the observed network. In contrast, the clustering coefficient for an observed small-world network should far exceed that of comparable random networks. This was also the case for the mafia network, in which the observed CC was .23 compared to an average of just .011 in the random networks. The *small world quotient* is defined as the *clustering-coefficient ratio (observed to random) / path-length ratio (observed to random)*; the greater this quotient, the more the network resembles a small-world structure. The mafia

**Figure 2.3:** Bridging ties between mafia families



*Note: Nodes are collapsed by family and sized by membership count. Edges are weighted by the number of network ties between members of the respective families.*



network averages 17.67. For reference, this small-world quotient exceeds those for two of the three example small-world networks originally used by Watts and Strogatz (1998).

To briefly step back, this chapter so far has applied a combination of archival records and computational induction to address a version of what network analysts refer to as the “boundary specification” problem (Laumann et al. 1992). At the network level, as discussed in section 2.2, the social system under investigation has been broadly defined to include individual actors who were prominent enough by reputation for inclusion in a dossier meant to comprehensively cover major known members and affiliates of Italian-American mafia families. This set of families in turn includes groups who, based on contemporary accounts cited extensively in the previous substantive discussions, would have plausibly recognized one another as belonging to a common enterprise with ethnic and organizational roots in the Sicilian *Cosa Nostra*.

In identifying a meaningful set of groups within the network, I have relied on the assumption that the boundaries between (usually geographically defined) mafia organizations are the most useful and consequential for further analysis. This assumption needs justification. An alternative approach would have been to make no such assumptions, instead inductively defining relevant network groupings based on an uninformed community detection algorithm or some similar clustering technique. I favor the former (informed) approach for two main reasons. First, it is better suited to answering the main puzzle of *how* otherwise relatively closed mafia families com-

bined to form an integrated and cohesive national network. Defining organizational boundaries and then examining the network connections that bridge those boundaries allows us to problematize the structure of integration in a way that would be difficult if groups were defined purely by induction; in cases where two organizations were closely tied through network bridges, the inductive approach may simply categorize the two organizations as representing a single group, thereby assuming away the question of how the two organizations came to be closely tied in the first place. Second, the approach taken here gives credence to the social reality described in every first-person account of which I am aware, in which affiliation with a mafia family is viewed as a consequential and meaningful organizational commitment, albeit not one that is so totalizing as to completely preclude all extra-organizational relationships. This point should become especially evident in Chapters 3 and 4 when I demonstrate the consequences of different modes of family organization for the behavior of members.

Additionally, the empirical evidence suggests that the organizationally-defined groupings strike a useful balance between informativeness and parsimony. When I applied the popular Girvan-Newman community detection algorithm (Girvan and Newman 2002) to the full network without any prior information on family membership, the results suggested that the most purely informative possible clustering of nodes—i.e., the one that best describes the community structure by maximizing the resulting modularity—would contain 33 clusters with a modularity of  $Q = .64$ . Notably, the modularity is larger than when groups are defined by organizational boundaries, but not dramatically so—in fact, the organizationally-defined network

comes surprisingly close to also providing a maximally informative description of the relationships therein. The 33 clusters add some granularity, but at the expense of less parsimony than the 24 organizationally defined groups. Notably, the 33 clusters include 13 with five or fewer members, groupings that would be of limited interest for an analysis of interconnection across network boundaries.

## 2.5 Kinship Bridges

In a thorough analysis of Al Capone’s organized crime network, Smith and Papachristos (2016) suggest one possible mechanism explaining integration across network boundaries—*multiplexity*, defined as the existence of multiple relationships between the same pair of actors (e.g. a business relationship as well as a kinship tie). In the Capone-centric world of Chicago organized crime, the overlap across criminal, personal, business, and political networks provided a kind of structural glue for integrating otherwise disparate social spheres.

Previous qualitative evidence suggests that direct linkages between mafia families sometimes emerged through intermarriage (Ianni and Reuss-Ianni 1972). While the historical record does not particularly impress one with the frequency of such ties, a few salient cases certainly stand out. In particular, historical accounts often reference Detroit mafiosi Joseph Zerilli and William Tocco, who together formed part of the city’s ruling mafia council (known by contemporary law enforcement as the “Detroit Partnership”). Briefly, Tocco married Zerilli’s daughter and had a daughter of his

own who married the son of Los Angeles boss Nicholas Licata. Zerilli had a son who married the daughter of Brooklyn boss Joseph Profaci. Together, Tocco and Zerilli lay at the center of an elite kinship network that stretched from coast to coast (U.S. Senate 1963).

If the fictive “families” of mafia organization were, at their core, built upon networks of actual kinship, to what extent might the network linking these families together reflect patterns of intermarriage across groups? To what extent might the mob families of the mid-20th century United States have resembled the economic and political elites of Renaissance Florence (Padgett and Ansell 1993), for example, strategically partnering themselves and their children in order to establish gainful connections and access greater power, information, and resources? Figure 2.4 takes the full mafia network and peels away all but the ties of criminal association that occurred between mafiosi who were *also* linked by kinship—including both blood and intermarriage. The first pattern to note is that the kin-only subnetwork features just 13 percent of the mafiosi and 9 percent of the criminal association ties in the original network. Second, while kinship connections sometimes cross organizational boundaries, they seemingly operated more commonly as a basis for the consolidation of influence *within* organizations. In total, kinship accounts for just 6 percent of the bridging ties between organizations, leaving a great deal of room for other explanatory mechanisms.

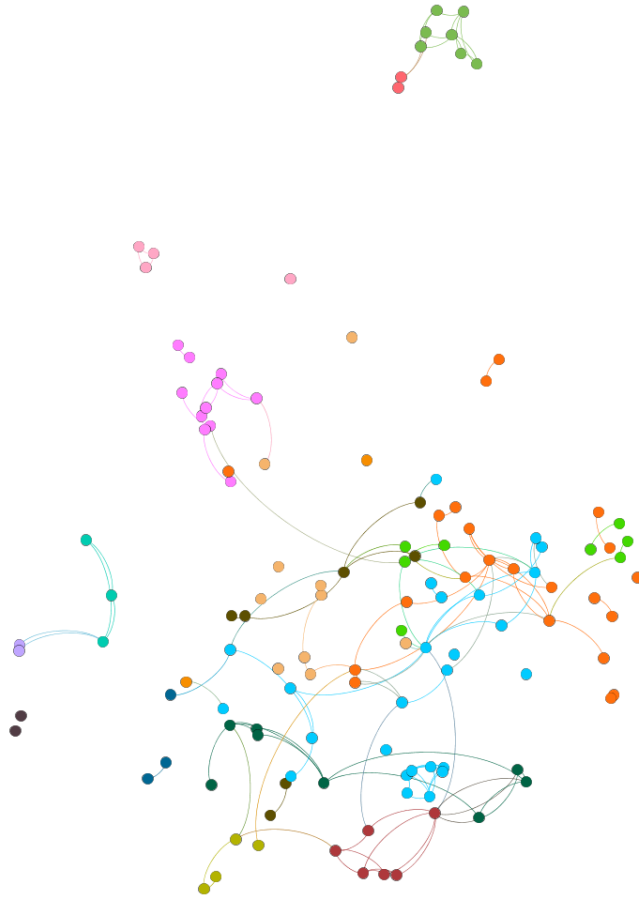
In short, multiplexity in the form of kinship ties overlapping with ties of criminal collaboration is unlikely to scale up enough to account for cross-family and inter-city

integration in the mid-20th century mafia network analyzed here. Since multiplex ties by definition feature multiple layers of social connection, they also tend to be embedded strong ties and are hence unlikely to bridge large social and geographic distances (Granovetter 1973). Yet, unlike the earlier Prohibition-era organized crime networks managed by Capone and others, what made the later American Mafia precisely so fascinating to scholars, policymakers, and the public alike is that it appeared to be much more than local in scope—instead bearing the trademarks of a well-organized national or even international conspiracy.

## 2.6 Division of Network Labor

What might explain the co-existence of high local clustering with significant bridging ties between otherwise clearly separated mafia groups? One explanation would be that most mafiosi in the network maintained a balance of within-family and between-family ties. A different explanation would be that there emerged a *division of network labor* in which relatively few mafiosi maintained most of the key bridges generating network integration and structural efficiency. Figure 2.5 shows the distribution of the number of bridging (extra-family) network ties maintained by each mafioso and clearly suggests evidence for the second explanation. In fact, 32 percent of mafiosi had *zero* ties outside their own family and another 19 percent had just one. Yet, a smaller number of mafiosi acted as key brokers maintaining many extra-family ties. This skewness is not a mere reflection of differences in network degree, either;

**Figure 2.4:** Kinship ties in the mafia network

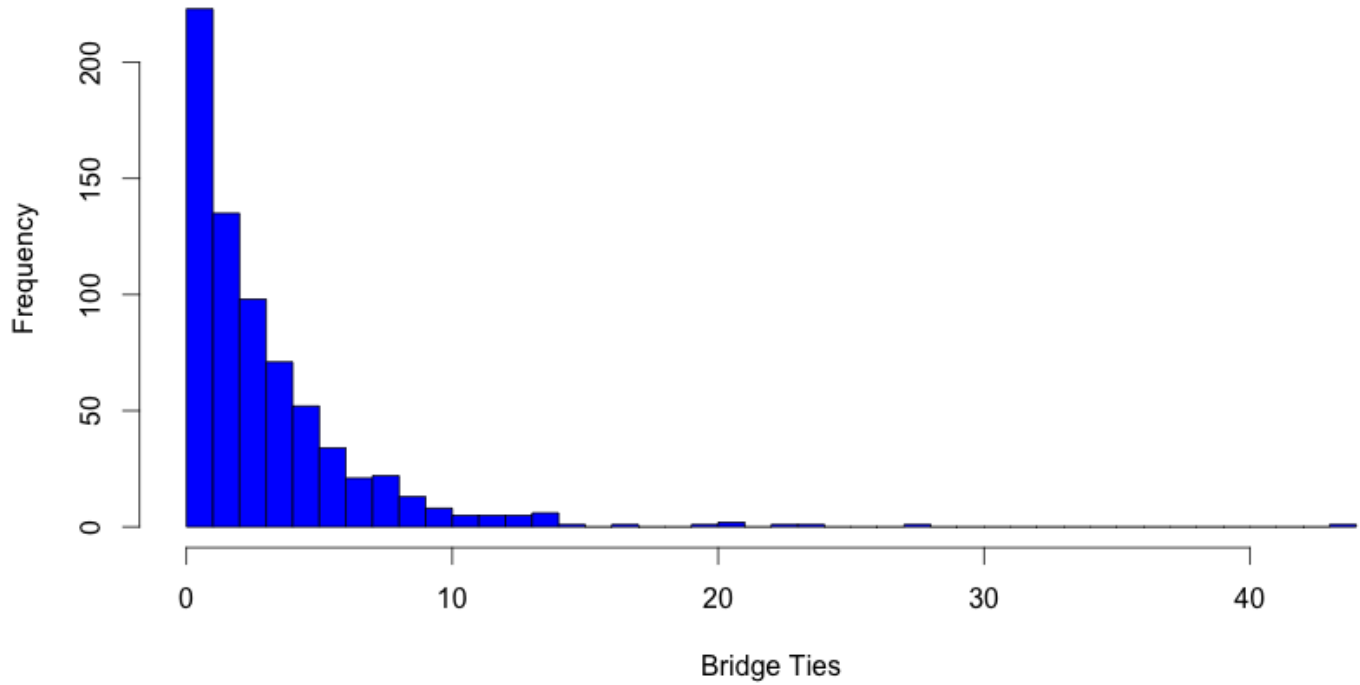


*Note: Nodes are colored according to family membership.*

a similar distribution appeared when I instead looked at the *proportion* of bridging ties in each mafioso's egocentric network.

The natural next question is *to whom* the distinctive role of network bridge was most likely to fall. A long literature associates the occupancy of bridging positions in network structure with personal influence, access to diverse information and re-

**Figure 2.5:** Histogram of bridging ties in egocentric networks



sources, and higher social status (Burt 1992, 2004; Emerson 1962; Fernandez and Gould 1994; Marsden 1983; Stovel and Shaw 2012). Yet the bridge-status association is also seen as conditional and dependent on group context, with actors who occupy boundary-spanning network positions at risk of being perceived as duplicitous or untrustworthy in contexts where collectivism and group solidarity are paramount (Xiao and Tsui 2007).

To observe the bridge-status association in the mafia network, I leverage a unique

feature of the data set—the directed nominations of criminal associates contained in each mafioso’s criminal profile. Since each profile is limited in space, the number of criminal associates that can be listed in a given profile is also limited. Consequently, the investigators who constructed the dossier tended to prioritize better-known associates. Thus, a high-ranking mafia leader is more likely to appear in a lower-level mafioso’s list of criminal associates than the reverse, allowing us to exploit the directed nominations for leverage in measuring status and centrality in the mafia organization (Mastrobuoni and Patacchini 2012). Using this directed network, I measure each mafioso’s centrality using *pagerank* (Page et al. 1999). The pagerank measure is a variant of eigenvector centrality and is best known as the method through which Google ranks search results. Just as the highest-scoring web pages are those that are linked to by many and higher-ranked other pages, the highest-scoring criminals in the data set are those that receive nominations from many and higher-ranked other criminals.

I was able to confirm the face validity of the constructed measure by comparison with extant archival evidence on formal rank in the family hierarchy. Using available organizational charts for nine families from U.S. Senate (1963), I classified 196 individuals according to three broad classes of mafia rank: *leaders* (bosses, former bosses, acting bosses, etc.;  $N = 19$ ), *lieutenants* ( $N = 43$ ), and *soldiers* ( $N = 134$ ). A valid network-based rank measure should identify clear differences among these three classes corresponding to differences in actual rank within the family. It does—subtracting the average rank within each family to create an adjusted measure, I find that soldiers average about .00 (the value is not negative because soldiers are



compared to lower-level associates trying to gain entrance to the family ranks), lieutenants average about .02, and leaders average about .06. The value for lieutenants is right around the 75th percentile in the sample of 196 people while the value for leaders is much higher. For robustness, I also look at both *in-degree* (number of incoming nominations) and *betweenness* (number of geodesics or shortest paths on which the focal node lies) as alternative measures of individual rank.

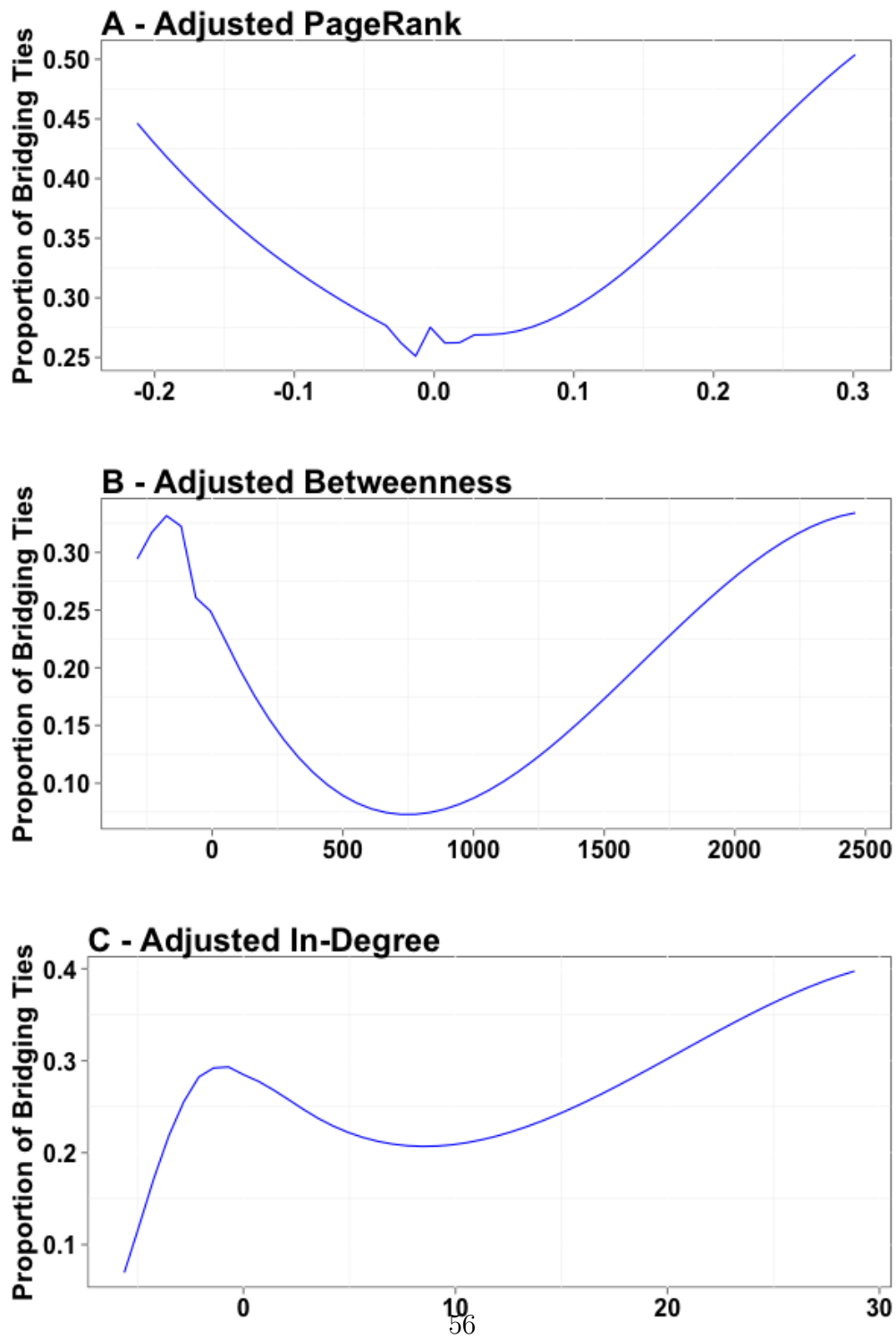
To make the analysis more meaningful, I generate family-specific centrality scores that only consider the network of ties *among* members of each family. This approach is needed because we want to see how the role of inter-organizational broker is distributed within the hierarchy of individual families.<sup>6</sup> In order to adjust for overall differences in the connectedness of different families, each mafioso's centrality score is centered by subtracting the family mean. Figure 2.6 displays nonparametric local polynomial fits of the relationship between the three adjusted measures of network centrality and the proportion of bridging ties in each mafioso's egocentric network. Interestingly, the results suggest a roughly U-shaped association between bridging and status, meaning that the mafiosi with networks built around bridging ties tended to be those with either relatively low or high status within their family of affiliation, but not those of relatively middling status.

Substantively, these patterns suggest a dynamic akin to what Phillips and Zuck-

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<sup>6</sup>Mastrobuoni and Patacchini (2012) similarly rely heavily on measures of network centrality in their analysis of the mafia network. The key difference is that they measure centrality purely in terms of the global network. While this approach is surely suitable for some purposes, it also very likely conflates individual-level centrality with group-level attributes such as organizational size and geographic locale.

Figure 2.6: Proportion of bridging ties by centrality



Note: Plotted values are based on local polynomial smoothing.

erman (2001) call *middle-status conformity*. Lower-status mafiosi can afford to occupy boundary-spanning bridge positions in the network because—by virtue of their already-low status—they have relatively little to lose from the approbation of peers who might view their boundary-spanning activity with suspicion. Conversely, high-status mafiosi can engage in boundary-spanning activity because their high status insulates them from the judgment of lower-ranked peers. This dynamic will become the main subject of Chapter 3.

## 2.7 Summary and Discussion

Network scholars have long argued that criminal and covert organizations are biased toward decentralized, less discoverable—and thereby more secure—structures at the expense of the diverse, cross-cutting relationships that classically make communication and coordination across network space more efficient (Baker and Faulkner 1993; Erickson 1981; Morselli et al. 2007). While previous work has illustrated this argument within the context of particular criminal organizations or conspiratorial incidents, the present chapter extended it to the analysis of a larger-scale national criminal network spanning more than 700 members of 24 distinct American mafia families operating in the mid-20th century. There are limitations to the analysis taken up here. For example, the focus on ties of criminal association is in some ways too broad and in others too narrow—too broad in the sense of missing the precise behavioral content of individual connections and yet too narrow in the sense of miss-

ing the richer matrix of political, social, and economic ties within which organized crime is embedded (Papachristos and Smith 2014). Despite these limitations, two key sets of findings have emerged from the analysis.

First, I showed—using Newman and Girvan’s (2004) concept of *modularity*—that the American mafia network was dominated by intragroup ties that gave rise to dense networks of criminal association within particular organizations or “families.” While organizational boundaries were lower in the case of New York City, where five families operated in the same urban area, I still found that intragroup ties appeared with far greater regularity than one would expect by chance. Nonetheless, the national network featured substantial integration across organizational clusters such that a mafioso in Providence or New York could typically reach one in San Francisco or Los Angeles through just a few degrees of separation. By comparing the observed structure with randomly “rewired” networks of the same size, I showed that the American Mafia was an example of a small-world structure featuring both high local clustering and low average path lengths (Watts and Strogatz 1998). These small-world properties point toward a balance in network structure that allowed for both high security—by virtue of dense local clusters with relatively few outgoing connections—and high efficiency—due to bridging ties that greatly increased each criminal’s reachability from any other.

Second, in attempting to shed light on the mechanisms that gave rise to this structure, I demonstrated evidence for a *division of network labor* in which a relatively small number of actors occupied the bulk of the bridging connections giving

rise to network integration. Rather than broadly dispersed, occupancy of inter-organizational network bridges was heavily concentrated among a minority of network members. Furthermore, by applying several measures of status centrality within families, I found suggestive evidence for a dynamic of middle-status conformity (Phillips and Zuckerman 2001) in which bridging ties were most prevalent in the networks of either low- or high-status—but not middle-status—criminals. The next chapter will seek to go beyond this description of the network structure by examining more closely how patterns of brokerage and closure arose out of mechanisms embedded deeply in the institutional life of mafia families.

### CHAPTER 3

## BROKERS AND BOUNDARIES

In the preceding chapter, we saw through a reconstruction of the historical network linking together 24 mafia families across the United States that the American Mafia is best seen as a version of a small-world network combining high localism and closure with extensive integration across geographic and organizational boundaries. We also saw that this balanced structure reflected a division of network labor in which a small minority of actors disproportionately accounted for the bridging ties linking together disparate families. Moving beyond the analysis of whole network structures, the focus of this chapter is to account for this division of network labor in more detail through analysis of the individual-level correlates of brokerage. As discussed at length in Chapters 1 and 2, the mafia family represents a classic case of a closed organization with a heavy emphasis on loyalty and undivided commitment. At the level of the individual mafioso, then, why and how would one take up the task of brokerage across family boundaries? And at the level of the mafia family, how does the organization balance the need to access diverse valued resources against the risk of diluting the loyalties and identities of its members?

To move toward an effective answer to these questions requires engaging with broader theories of network position and social capital. Network scholars have long seen brokerage—defined as the occupancy of bridging positions between otherwise unconnected people and groups in network structure—as a wellspring of social capital. By virtue of having access to multiple overlapping social circles, brokers are

more likely to be exposed to novel information and to see potential opportunities that would be missed by peers entrenched within comparatively insular network arrangements (Burt 1992, 2004; Granovetter 1973). In organizational contexts, occupancy of brokerage positions is associated with greater likelihood of promotion, higher rates of innovation and creativity, better compensation, and even the discovery of “good ideas” (e.g. Brass 1984; Burt 1992, 1997, 2004; Fleming et al. 2007; Kleinbaum 2012). More broadly, brokerage has been shown to be a precursor of power, status, and influence across an impressive array of domains, from organizational networks in the healthcare policy field (Fernandez and Gould 1994) and political competition among rival families in Renaissance Florence (Padgett and Ansell 1993) to elite political mobilization in both America and England (Hillmann 2008a,b) and even virtual achievement in a massively multiplayer video game (Burt 2012). In short, as Kleinbaum (2012) summarizes: “If the social networks literature has taught us anything, it is that brokers do better” (p. 407).

Yet, other empirical studies suggest that the individual returns to brokerage are contextually specific. In cultural and organizational contexts where group solidarity and cohesion are heavily valued, individuals who occupy boundary-spanning brokerage positions may be viewed with suspicion rather than rewarded for their diversity of interests (Podolny and Baron 1997; Stovel and Shaw 2012). Whereas Burt (1992) famously argues that managers accrue social capital by spanning “structural holes” between otherwise disconnected alters, Xiao and Tsui (2007) find that similar outcomes fail to materialize in Chinese firms where commitment and loyalty to the group are paramount. Explaining this discrepancy, they argue that social capital is cultur-

ally contingent: within the collectivistic culture of the Chinese firm, brokers are seen as deviant and disloyal rather than enterprising and entrepreneurial (though see Nee et al. 2017).

While attending to heterogeneity in the benefits of brokerage *across* cultural and organizational contexts, however, comparatively little attention has been given to heterogeneity *within* such domains. This is surprising given extant evidence that—even in contexts where informal networks are almost entirely organized around parochial in-group ties—the complete absence of bridging connections is rare. As previously discussed, for example, small-world network theory observes that even networks dominated by local closure generally feature enough cross-cutting connections that any two actors are likely to be tied through just a few intermediary links, famously captured in the notion of “six degrees of separation” (Watts and Strogatz 1998; Watts 1999). But when social groups demand unfettered commitment and suspect dilettantes, what kinds of actors make the wide-ranging connections necessary to bridge the parochial divide? After all, any potential broker might risk her standing within her own group by transparently pursuing brokerage between groups. This puzzle suggests the need for greater investigation of how variation in the network positions occupied by *different* actors in the *same* cultural and organizational context corresponds to heterogeneity in the individual returns from brokerage.

Addressing this puzzle, I argue that a division of network labor within parochial organizations emerges specifically as an unintended consequence of organizational attempts to control and regulate membership. High-commitment organizations often



implement rules of institutional closure limiting access to group-controlled resources to actors who meet specific standards of membership and have proven themselves sufficiently loyal (e.g. Coser 1974). These rules have the additional effect of encouraging members to build their informal networks in ways that deepen their attachment to the group and their access to parochial social capital, conversely discouraging brokerage activity that might create the appearance of duplicitous motivations. In such contexts, I argue that the actors most likely to occupy brokerage positions are those who can afford the potential damage to their image—either because their already-secure status within the group insulates them from judgment or because their outsider status leaves them with little to lose in the first place (Phillips and Zuckerman 2001).

For the second category of “outsider brokers,” furthermore, occupancy of brokerage positions provides a path to obtaining greater influence and status *within* a closed group. Yet, this pathway to influence also depends critically on the absence of a market for brokerage among more well-connected insiders. Unless brokerage activity is discouraged for insiders, in other words, outsiders will remain at a structural disadvantage because they represent a necessarily indirect network connection into the organization. Taken together, this argument reveals a seldom-noted paradox of social organization: By ensuring a robust demand for brokerage while simultaneously ensuring that few insiders will emerge to fill this demand, organizational attempts at institutional closure can have the unintended consequence of empowering outsiders to form wide-ranging connections that undermine the very boundaries those attempts at closure are designed to protect.

By way of preview, I find that the occupancy of brokerage positions between mafia families was generally a status liability rather than a benefit. More interesting are the exceptions to this rule. First, I show that brokerage positions between families were disproportionately likely to be occupied by either high-status criminal elites or by non-Italian ethnic outsiders who were specifically barred from membership in any family. Second, I demonstrate that, for these ethnic outsiders, brokerage *between* families was associated with higher status *within* families. Third, a multilevel analysis suggests that the status correlates of brokerage also depended on the degree of organizational closure in a given family. Yet, this interaction worked in opposite directions for elite Italian criminals and for ethnic outsiders. For the former, brokerage was correlated with status in mafia organizations with open network structures, where occupancy of brokerage positions might be seen as more normatively acceptable. In contrast, ethnic outsiders saw a positive correlation between brokerage and status especially in organizations with closed network structures, since the absence of bridging ties held by better-connected Italian criminals made non-Italians more likely to hold exclusive access to potentially valuable connections in other organizations. Finally, I show that this pattern extends even beyond the hard distinction between Italian “insiders” and non-Italian “outsiders”—for lower-status Italian criminals, too, brokerage between mafia families was more likely to be a status benefit rather than a liability.

The remainder of the chapter proceeds as follows. First, I briefly review the two dominant mechanisms through which network structure has been thought to produce social capital—*brokerage* and *closure*. Building on this literature, I then

present the main theoretical argument: that institutional closure gives rise to a division of network labor with heterogeneous rewards associated with the occupancy of brokerage positions. After describing some illustrative network examples, I present multivariate analyses that document three key patterns: (1) heterogeneity in the occupancy of brokerage positions in the inter-organizational network, (2) corresponding heterogeneity in the relationship between inter-organizational brokerage and intra-organizational status, and (3) further variation in this relationship across organizations with open and closed network structures. I conclude by summarizing the chapter and discussing some limitations of the analysis.

### 3.1 Network Structure and Social Capital

Scholars have classically seen the relationship between network structure and social capital as emerging through two mechanisms: *brokerage* and *closure*. Arguments for brokerage begin from the observation that network ties—relationships connecting actors in social space—have distinct capabilities connected most critically to the length or “range” of the tie. Granovetter (1973) famously argues that longer-range “weak” ties—those spanning greater distances in the network—bear more novel information than shorter-range “strong” ties embedded in dense local clusters.<sup>1</sup> Since actors embedded in the same local networks tend to share many overlapping affiliations, they

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<sup>1</sup>If the idea of network distance is not intuitive, simply consider what would happen if one were to erase the tie between two actors *A* and *B*—would it then be easy or difficult to trace an additional path between the two actors? If there is an additional short path (e.g. through a third actor *C* who is connected to both *A* and *B*), then we can say that the network distance between *A* and *B* is low.

also tend to hear many of the same things and receive much of the same redundant information.<sup>2</sup>

Subsequent work, most notably Burt’s (1992) theory of “structural holes,” extends this principle to analyze sources of individual advantage in network structure. An actor occupies a structural hole when she bridges between two otherwise unconnected actors in the network. In line with a focus on networks as instrumental structures for the acquisition of desired resources, *A*’s occupancy of a structural hole between *B* and *C* implies that a potential transaction between the latter two actors could be brokered by *A*. Accordingly, *A* has the advantage of what Simmel called the *tertius gaudens* (“the rejoicing third”) who can play *B* and *C* off of one another for her own benefit. When examining network structures derived from surveys and other sociometric instruments meant to uncover a broadly defined set of relationships among actors, brokerage often refers not to any specific instance of mediation but rather more broadly to the occupancy of network positions that provide the *opportunity* for such mediation in a network of ongoing informal relationships. In such cases, we use the term *brokerage* as a shorthand for “potential brokerage” (Fernandez and Gould 1994). Network positions associated with high potential brokerage have in turn been seen as a major correlate of personal advantage, yielding access and control over flows of resources and information (Boissevain 1974; Brass 1984; Burt 1992, 1997, 2004; Emerson 1962; Fernandez and Gould 1994; Fleming et al. 2007;

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<sup>2</sup>As pointed out by Aral and Van Alstyne (2011), however, longer range ties may bear a higher *rate* of novel information per interaction but still less overall novel information due to the lower *bandwidth* (e.g. lower frequency or duration of interaction) of these ties.

Kleinbaum 2012; Marsden 1983; Stovel and Shaw 2012).<sup>3</sup>

The robust counterargument for network closure as the key to social capital is rooted in Coleman’s (1988) emphasis on the dense, redundant webs of affiliation that bind individuals to groups and give rise to social cohesion and trust. Whereas boundary-spanning bridge ties lower *opportunity costs* by easing access to novel information and resources held by more socially distant actors or groups, local network closure lowers *transaction costs* by enabling groups to exercise greater normative control over their members (Coleman 1988; Greif 2006; Nee and Oppen 2012; Peng 2004; Portes and Sensenbrenner 1993). In the simplest such scenario, consider a closed triad in which actors *A*, *B*, and *C* are each connected to one another. While none of the three enjoy any potential advantage as brokers—no actor can take advantage of an absent tie between any two others—*A* and *B* are more likely to be able to influence *C*’s behavior through a combination of mutual monitoring, information sharing, and joint pressure. The monitoring capacity present in networks full of such closed triads—hence made up of dense webs of overlapping social relationships—enable what Portes and Sensenbrenner (1993) term *enforceable trust*, meaning that conformity with group expectations is more easily monitored and deviance from these same expectations more expediently discovered and punished. Echoing this

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<sup>3</sup>Yet, as Buskens and van de Rijt (2008) elegantly highlight, the fact that the returns to brokerage decrease with the number of actors capable of performing it means that the incentives for brokerage are also dynamic and density-dependent. Reagans and Zuckerman (2008) highlight another tradeoff: if the “bits” of information and resources stored in different groups are *nonsubstitutable*, then the non-redundancy of the broker’s network undermines her power as an acquirer of resources even as it empowers her as a provider of resources. The reason is simple: while ego’s network diversity ensures that ego’s alters will have few alternative sources for the resources controlled by ego, it also implies that ego will have few alternative sources for the resources controlled by her alters, since having such alternatives would presumably require redundant ties.

line of thinking and applying it to advancement within an organizational environment, Podolny and Baron (1997) argue that brokerage may fail to yield benefits to the extent that the broker is seen as violating clear and consistent role expectations associated with one's position in the organization. "A clear social identity," they write, "is facilitated by smaller networks that display high closure and cohesiveness, not large networks full of structural holes" (p. 674).<sup>4</sup>

The identity of the broker, and not just the cultural or organizational environment, also matters. This is especially evident in research on coalition building in networks of political actors, where successful brokerage depends not just on spanning diverse groups in network structure but also on the broker's ability to make use of this structural alignment. Illustrating the complexity of these dynamics, Fernandez and Gould (1994) find that organizational brokers who operate as "representatives" from within a policy cluster capitalize on brokerage by taking public stands on events, whereas "outsider brokers" must remain neutral in order to convert network position into policy influence. Examining coalition building as a precursor to mobilization in the English Civil War, Hillmann (2008b) finds that effective political brokerage belonged to actors with a particular identity—new merchant elites with business interests in the American colonies could draw on their embeddedness in multiple networks to mediate between diverse elite interests. Common to these empirical set-

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<sup>4</sup>Yet, contrasting brokerage and closure as mechanisms need not always imply an antagonistic relationship. For example, Burt (2000) frames brokerage through structural holes as a source of "value added" and accompanying structures of closure as enabling the realization of that added value. While not explicitly using network terminology, Putnam (2000) distinguishes between local "bonding" capital and between-group "bridging" capital. The focus of the present analysis on bridging ties between otherwise closed and cohesive groups is consistent with these accounts.

tings is the existence of disjoint groups that could nonetheless benefit collectively from cooperation. Clearly, this is not always the case, as when cosmopolitan brokers bridging larger distances in social space undermine and thereby threaten the power enjoyed by local brokers (Hillmann 2008a).

To pull these different threads together: A longstanding literature suggests that brokerage is a key source of social capital, but that the ability to translate brokerage into individual advantage is also contextually dependent. In organizations where commitment and loyalty are prized, brokerage can become a liability and even be seen as a form of deviance. What this discussion misses, however, is that the benefits of brokerage might be just as heterogeneous *within* organizational and cultural contexts as *across* such contexts. This is perhaps best evidenced by the fact that most networks feature a balance between brokerage and closure, with the task of brokerage often falling to a relatively small number of motivated actors. A largely separate literature on political brokerage argues that the identity of the broker matters when attempting to mediate between groups with divergent identities. However, the historical case studies comprising this literature generally focus on contexts in which groups with divergent identities nonetheless have a clear collective interest in collaboration. In many other contexts, however, individual actors pursue brokerage outside the bounds of group control, forming bridging ties that may serve—but just as likely undermine—collective interests. For example, Erikson and Bearman (2006) document the privateering activities of English East India Company ship captains who sailed port-to-port to form a network of malfeasant private trading despite the narrowly prescribed trade routes imposed by their superiors. This deviant activity

was brokerage in the classic sense of weaving new connections between distant actors (i.e. traders in port cities) in order to facilitate the flow of resources across gaps in social structure (Stovel and Shaw 2012). Yet, this private brokerage came at substantial financial cost to the East India Company itself.<sup>5</sup>

Bridging these debates, this chapter asks: what kinds of actors take up the task of brokerage in contexts where brokerage activity itself is seen as a form of deviance? Even if a relatively small number of brokers is sufficient to integrate actors from disparate groups, in other words, who might become a broker given the risk of exclusion and perceived duplicity among one’s colleagues? And do such actors pursue brokerage *as part of* or merely *in spite of* their attempts to increase their status and legitimacy in the eyes of others—and thus their access to social capital?

### 3.2 Brokerage from Institutional Closure

A century ago, Simmel described a ubiquitous social type: the “stranger” whose role in the group is defined “by the fact that he does not belong in it initially and that he brings qualities into it that are not, and cannot be, indigenous to it” (Simmel 1971, p. 143). Due to this outsider status, Simmel also posited that the stranger involved in economic activity would always appear as the sojourning trader—in effect, a broker—lacking permanent roots (i.e. landed property) in any one locale. Rather than viewing the pursuit of brokerage as a strategic game played among insiders,

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<sup>5</sup>As Erikson and Bearman (2006) also note, however, the resulting framework of a more globally integrated trade network was later exploited to the company’s benefit.



Simmel's account suggested that brokerage can instead be a residual function left to marginal actors with few alternatives. Yet, it can hardly be said that marginal status guarantees a capability or aptitude for brokerage. In many cases, marginal actors left out of dominant institutional arrangements are instead relegated to clientelistic positions in which their access to resources depends solely on patronage from better-connected insiders.

Furthermore: How do outsiders become outsiders in the first place? This difficulty can be skirted over when network structure is presented as an *a priori* given independent variable, or if brokers are retroactively defined as outsiders *because* they are positioned at the interstices of multiple groups. However, patterns of relations often emerge through individual agency and are shaped by the incentives associated with the occupancy of different network positions. While the migrant trader described by Simmel played a brokerage function in much the same way as the corporate mover-and-shaker chronicled by Burt (1992), for example, the forces that lead each to this role differ dramatically. Whereas the corporate broker inhabits the role by playing the strategic game of the insider, the migrant trader becomes broker because he or she has few other options. Yet, attention to heterogeneity in the mechanisms that shape network position often falls casualty to an emphasis on networks as causal forces unto themselves. One key to explaining such heterogeneity is to focus not just on patterns of relations but also on institutional features—rules and norms—of social groups (e.g. DiMaggio and Powell 1983; Fligstein and McAdam 2012; Nee and Ingram 1998; Powell et al. 2005). After all, network structure reflects and aggregates the rules, norms, meanings, and incentives guiding behavior, which are in turn

heterogeneous across social positions and categories.

In the discussion of theoretical mechanisms in Chapter 1, I suggested that the network positions available to different actors in a particular context could be explained by corresponding patterns of *institutional closure*, defined in terms of the rules and norms that distinguish insiders from outsiders in particular institutional and organizational contexts. Chapter 2 provided some suggestive evidence for this explanation when we saw that the relationship between occupancy of bridging ties between mafia families and status within one's own family was U-shaped—bridging ties were predominantly held by either the lowest- or highest-status actors, but not those of middling status. This pattern makes sense in light of theories of “middle-status conformity.” When avoiding brokerage is a norm of conformity to group expectations, the highest-status insiders can deviate for the simple reason stated by Phillips and Zuckerman (2001): “Since high-status actors feel confident in their social acceptance, they are emboldened to deviate from conventional behavior” (p. 380). In contrast, conformity will be highest among “actors who value their membership in a group yet feel insecure in that membership” (ibid.). However, the motivations and consequences behind brokerage are likely to differ in the cases of the unconditional outsider and the well-connected insider. The high-status insider might maintain bridging ties simply because her status within the group affords greater freedom from the potential reprobation of peers. Insider brokerage could also arise incidentally, since actors who are well connected in general will also tend by chance to have more bridging ties. For the outsider, in contrast, brokerage provides a potential path to higher status within the group. By controlling key bridges, the outsider can fa-

cilitate transactions that group members may not be equipped to pursue themselves for fear of appearing uncommitted.

Yet, another wrinkle in this argument emerges from the interaction between *institutional* and *network* closure, where the latter is defined as the absence of bridging ties between groups. Even when group members are rewarded for loyalty and undivided commitment rather than diversity of connections, the incentives for insiders to stay within the group's boundaries implicitly depend on others doing the same. If all insiders engage in frequent exchange outside the group's boundaries, no one individual can be pinpointed as disloyal and thereby suspect. As in other cases of "deviant" activity, this allows for strength in numbers. In such situations where the group's network boundaries become fuzzy and permeable, outsiders are potentially *disadvantageous* brokers because they provide a less direct route of access than well-connected insiders who are willing to engage directly with non-members. The advantage of outsiders as brokers thus depends especially on the relative exclusivity of their brokerage ties, or the absence of a market for brokerage among generally better-connected insiders.

In sum, the common intuition holds that the more closed the group, the greater the returns to insider status. However, the flip side is that the same closure mechanism also potentially increases the returns to outsider brokerage by ensuring the exclusivity of the brokerage ties maintained by those outsiders. The main theoretical expectations for subsequent analysis can be summarized in three propositions: (a) that brokerage positions spanning boundaries between high-commitment groups

should be especially likely to be occupied by either higher-status insiders or by excluded outsiders; (b) that of these two classes of brokers, only outsiders will see a correlation between brokerage and higher status within a closed group; and (c) that these outsider brokers will see a larger correlation between brokerage and status in groups featuring high overall levels of network closure, whereas insider brokers might see a positive correlation between brokerage and status in groups featuring low levels of network closure.

### 3.3 Ethnic Outsiders and Interfamily Exchange

Ethnic non-Italians, though few in number in the mafia network (I record 24 in total, or roughly 3.4 percent), provide a useful “test case” for illustrating the tendency for brokerage to be disproportionately concentrated among relative outsiders. As I will later show, furthermore, it is a test case that usefully generalizes to the broader population of mafiosi. For the Italian criminal, membership in a mafia family was exclusive and permanent. Thus, we can think of Italian mafiosi as *conditional outsiders* who could not belong to any family but their own. The restriction of membership in *any* family to ethnic Italians made non-Italians *unconditional outsiders* who could not belong—at least in the sense of official membership—to any family.<sup>6</sup> The exclusivity and greediness of family membership made the typical Italian member unlikely to pursue brokerage between families, but paradoxically empowered non-Italian as-

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<sup>6</sup>Formally, members are distinguished from non-members by whether or not one has undergone an initiation ritual that has varied somewhat—while maintaining a common core—in different times and places (Gambetta 1993 describes both the core elements and variations in great detail).

sociates to operate at the margins of multiple groups, forging criminal connections that increased interfamily connectivity.

Since membership loyalties were only exclusive among Italian mafia families, the Italian mafioso could conduct business with non-Italian associates without seeming to have duplicitous family loyalties. Interethnic exchange furthermore featured less risk of costly conflict. Since mafias and other extra-legal “honor cultures” commonly entail collective responsibility for the defense of group members, individual disputes can give rise to long chains of reciprocated violence that draw third-party observers into the melee (Gould 2000; Papachristos 2009). If wronged by a non-Italian associate, however, the Italian mafioso could make solidaristic appeals to other members of his own group without provoking a rival Italian outfit. Relatedly, while scholars generally assume that the mafioso can use the threat of violence to encourage compliance with terms of exchange, this is only strictly true of exchanges between mafiosi and civilians. To inflict violence on a member of another family without permission from the boss of that family would be an extremely unusual breach of mafia rules (Abadinsky 1983). However, prohibitions against violence toward non-member associates were less stringent. By transacting through non-Italian intermediaries, in other words, the Italian mafioso regained his ability to use the threat of violence as a regulatory mechanism to enforce compliance with terms of exchange.

Viewed from the other side, the incentives for non-Italians to act as bridges between families were deceptively simple. According to the narrative of “ethnic succession” in American organized crime (Bell 1953; but see Lupsha 1981), American-

Italian mafiosi were inheritors of a criminal underworld previously dominated by Jewish and Irish-American gangs (Ianni and Reuss-Ianni 1972). Echoing a classic theme from Merton's (1938) analysis of crime and its socioeconomic functions, Bell characterized the urban rackets as "one of the queer ladders of social mobility in American life" (1953, p. 133). As Jewish and Irish immigrants gradually found increasing non-criminal opportunities for economic and social advancement, according to this narrative, slower-rising Italian immigrants became the dominant force in American organized crime. This transition was marked symbolically by the rise of Sicilian immigrant Salvatore Lucania—better known as Lucky Luciano—to a position atop the New York underworld previously held by Jewish beer baron Dutch Schultz (Abadinsky 1981). In subsequent decades, non-Italian organized crime withered in American cities. While Jewish and Irish criminals retained a limited presence, they became independent operators—and usually associates of American-Italian mafia families—rather than members of their own mafia-like ethnic enterprises. Lacking membership in any particular family, the non-Italian criminal was unlikely to occupy a central position within any one cluster of Italian criminals. This left the role of broker between families as an alternative path to increasing one's perceived power, status, and importance in the world of Italian-dominated organized crime.

While the non-Italian criminal's lack of membership in any family freed him to pursue brokerage between families as an alternative path to status, however, this does not necessarily mean that Italian criminals would have entrusted their bridging capital to ethnic outsiders. In fact, I expect that they would only do so if the network boundaries between families were particularly high. The reasoning behind

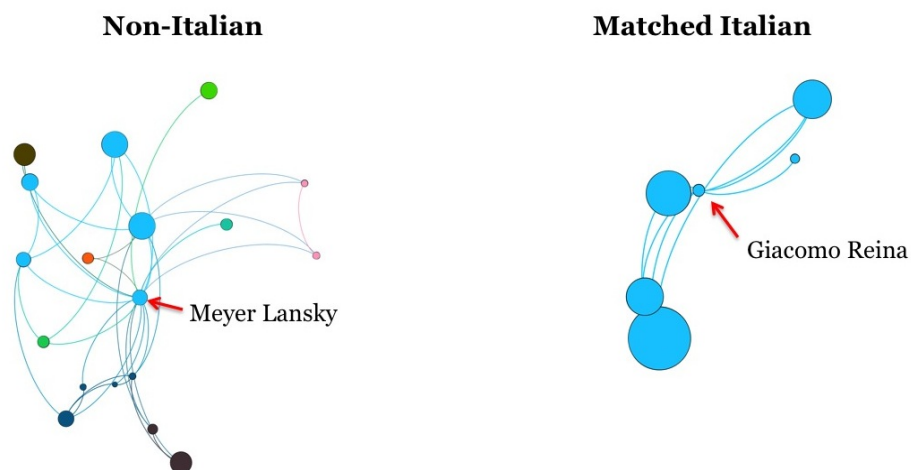
this expectation is straightforward. If network boundaries were low—suggesting the absence of a norm against brokerage—Italian criminals at various levels of the status hierarchy would be more willing to pursue brokerage between families. If one wanted to gain the most direct and valuable network access to another family, then, the most expedient route would be to make a connection with an Italian insider (preferably a well-connected one) of that family rather than taking the more circuitous route of going through a non-Italian associate.

Before proceeding, it is worth noting that while all non-Italians involved in mafia business were, by rule, non-member associates, the large majority of associates were ethnic Italians. Among Italian criminals, however, the role of associate was an entry-level position that would lead eventually to membership—the status of the *made man*—for those who could demonstrate family loyalty, sometimes by carrying out a contract killing on orders from the boss (Maas 1969). For the non-Italian criminal, by contrast, *made man* status would never be obtained; even for the most influential of these criminals, in other words, the role of associate was a permanent one.

### **3.4 Illustrative Examples**

The most historically familiar case of non-Italian influence in mafia affairs is likely that of Meyer Lansky, who controlled gambling interests in Havana, Las Vegas, and elsewhere along with financing drug smuggling in conjunction with prominent American-Italian mafiosi (Bureau of Narcotics 2007). Lansky’s egocentric network,

**Figure 3.1:** Egocentric networks for Meyer Lansky and Giacomo Reina



*Note: Nodes are colored according to family and sized by degree in the global network.*

plotted visually in Figure 3.1, included ties to nine different American-Italian mafia families. Lansky had strong base affiliations with both the Genovese family (shown in light blue) of New York City (including famed boss Francisco Costiglia) and the Trafficante family of Tampa (darker blue), which shared his financial interest in Cuban-based gambling businesses. Unlike a typical Italian mafioso, however, Lansky's network was also built heavily around bridging ties to other groups, including those in New Orleans (pink) and Chicago (dark brown). Clearly, Lansky is far from representative. Yet, it bears mention that the quantitative patterns reported later in this chapter remain strong even if Lansky and similarly exceptional cases are removed from the data.

To attempt an apples-to-apples comparison, I also match Lansky to an Italian criminal who shares the same main family of affiliation (in this case, the Genovese



family) and otherwise appears most similar to Lansky in terms of sociodemographic background and patterns of legal and illegal activity. In short, this is done by estimating a logistic regression of non-Italian ethnicity on a rich set of covariates (discussed in more detail in the context of the statistical analyses presented later in the chapter) and assigning propensity scores to each mafioso. Then, I match each non-Italian to the Italian criminal in the same family with the most similar propensity score. Unlike the typical application of propensity scores, this is not done here for the purpose of enabling more robust causal inference. Rather, it is used merely for illustrative and comparative purposes, with the goal of visualizing a given non-Italian criminal's network next to that of an otherwise similar Italian criminal.

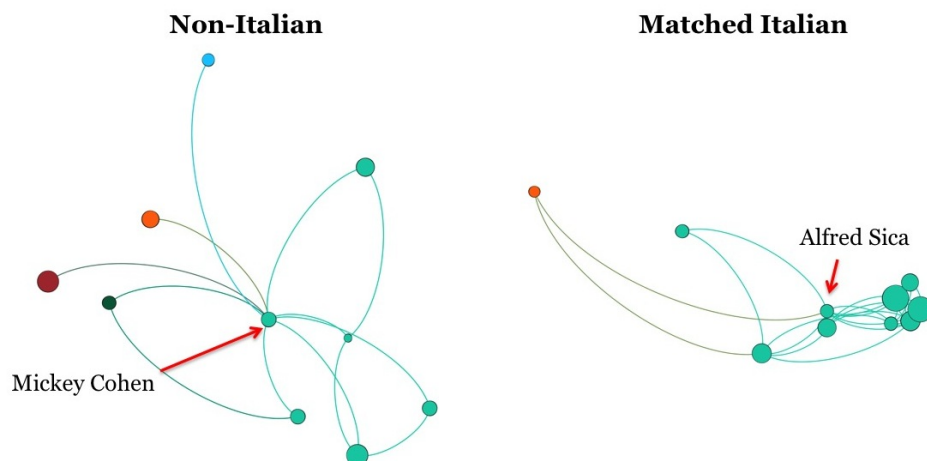
For Lansky, the matched Italian criminal shown in Figure 3.1 is Genovese family member Giacomo Reina. The contrast with Lansky is abundantly clear. Reina has ties only to other mafiosi in the Genovese family. These relationships generally involve mafiosi of much higher status and connectedness than Reina himself, with these high-status alters also tending to be tied to one another independently of Reina. Thus, Reina occupies a traditionally clientelistic position within his own network, occupying few structural holes and lacking any ability to bridge directly to mafiosi located in other families (even within New York City).

A second case of historically noteworthy non-Italian influence is that of Los Angeles-based Meyer “Mickey” Cohen, whose egocentric network is shown visually in Figure 3.2. In addition to reputedly controlling boxing and bookmaking in the L.A. area, Cohen had by 1960 been arrested more than 20 times for crimes rang-

ing from embezzlement and violation of tax laws to suspicion of murder (Bureau of Narcotics 2007). Like Lansky, Cohen’s network demonstrates a clear primary affiliation with other L.A.-based criminals (shown in light green). While Cohen’s tie with a Cleveland-based mafioso (dark green) is made redundant by an additional link between this same Cleveland mobster and one of Cohen’s Los Angeles cohorts, his other bridging ties feature no such redundancies. For example, Cohen could link Buffalo-based criminals (maroon) to those in Cleveland, or New York-based mafiosi (Genovese mafioso in light blue) to those in Los Angeles with whom Cohen mainly affiliated. Cohen’s matched Italian criminal is Alfred Sica, a bookmaker and extortionist who, together with brother Joseph, was a core member of the Los Angeles family (Bureau of Narcotics 2007). While well-connected within this group, Sica had only one tie beyond the family’s boundaries; and even this tie—to a member of New York’s Lucchese family—was made redundant by another mutual connection within Sica’s web of Los Angeles contacts.

Figure 3.3 depicts the network of Solomon Bloom, a significantly lower-profile and less historically influential non-Italian mafia associate who nonetheless occupied significant brokerage positions in the interfamilial network. Bloom was an interstate drug trafficker based out of Brooklyn (Bureau of Narcotics 2007). Despite an average-sized network with eight associates, Bloom in his capacity as a trafficker occupied several key bridges linking prominent Detroit-based mafiosi (purple) with a cross-ethnic drug trafficking circle in New York City that included other non-Italian associates as well as Lucchese family mafioso Anthony Vellucci. Bloom’s matched Italian is Nicholas Martello, a Lucchese-affiliated drug trafficker who operated in East Harlem and the

**Figure 3.2:** Egocentric networks for Meyer “Mickey” Cohen and Alfred Sica



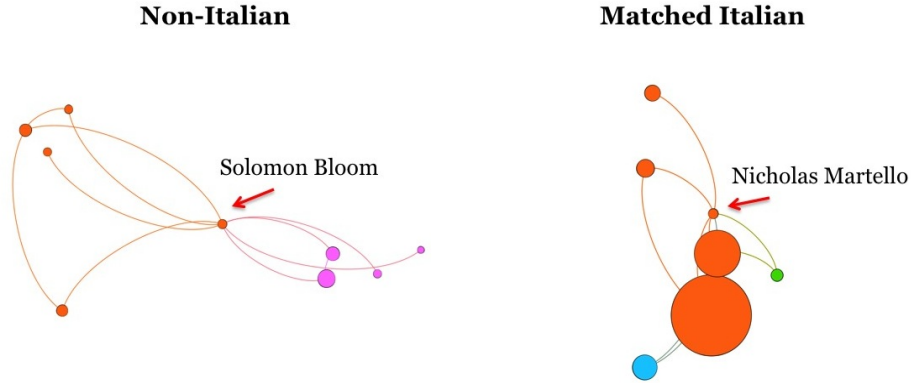
*Note: Nodes are colored according to family and sized by degree in the global network.*

Lower East Side of Manhattan (Bureau of Narcotics 2007). Martello’s network shows him to be in a classically clientelistic position. His main connections are to much more influential and well-connected Lucchese members and his two extra-family ties (to other New York mafiosi in the Gambino and Genovese families) are both redundant within his own network.

### 3.5 The Five Families of New York City

In the analyses presented below, I will measure brokerage in terms of the individual mafioso’s occupancy of network bridges between two mafia families located in different cities. Since nearly all cities featured just one family, there is usually no

**Figure 3.3:** Egocentric networks for Solomon Bloom and Nicholas Martello



*Note: Nodes are colored according to family and sized by degree in the global network.*

distinction between within-city bridging and between-city bridging. The exception is New York City, which featured five families (Genovese, Lucchese, Bonanno, Gambino, and Profaci). A brief detour here will help us see why the ties connecting these families together must be treated differently than bridging ties connecting families in different cities.

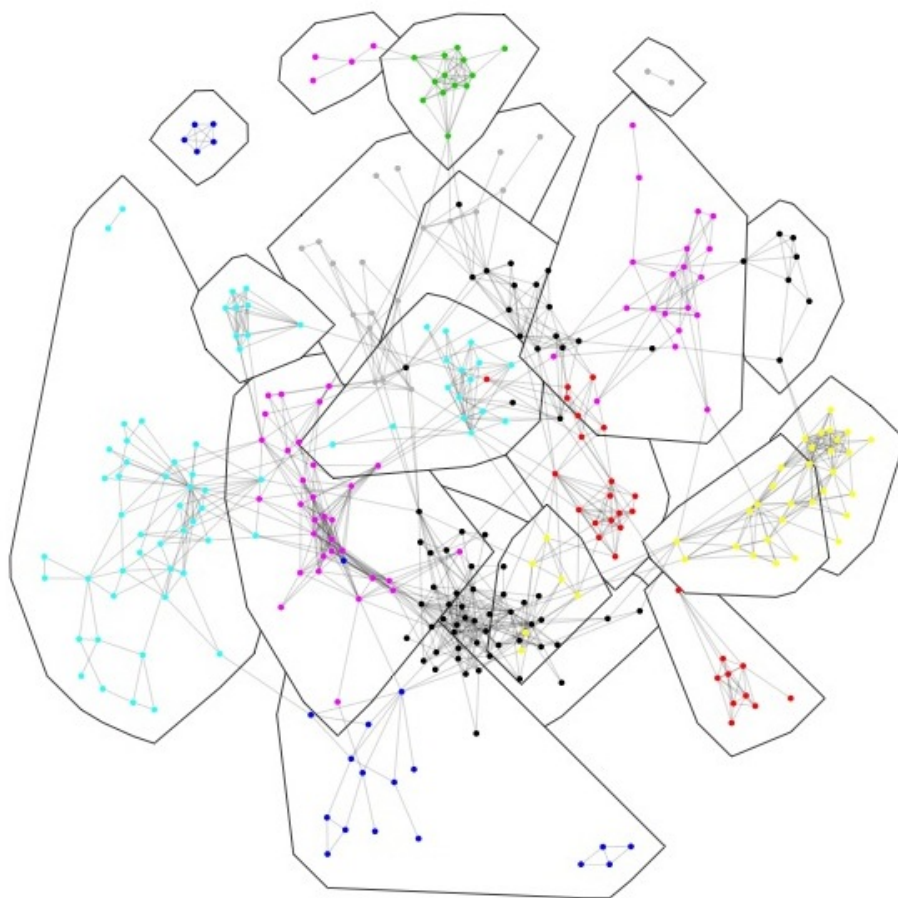
First, since many mafia businesses are local (e.g. the protection racket), we should expect a much higher baseline of network integration among families located in the same city (Gambetta 1993). Families inhabiting the same locale have both opportunities and incentives to work together on joint business ventures. For this conceptual and theoretical reason, we should at least be skeptical of treating within-New York City cities the same as ties between families in different cities.

More importantly, the intuition that boundaries would be qualitatively different among the Five Families finds overwhelming confirmation in the data. I decomposed the overall network ( $N = 707$ ) into one that contains only the affiliates of the five New York City families ( $N = 390$ ) and another that contains affiliates of the remaining 19 families ( $N = 317$ ). Figures 3.4 and 3.5 depict, respectively, family boundaries for the non-N.Y.C. and within-N.Y.C. sub-networks by drawing polygons around individuals with the same family affiliation. For the network of non-N.Y.C. families, the polygons overlap little and family clusters are easily distinguished from one another. For the N.Y.C. families, family boundaries are largely indiscernible and the polygons instead appear “stacked” on top of one another. The corresponding modularity metrics are  $Q = .78$  for the non-N.Y.C. families and  $Q = .33$  for the N.Y.C. families. Since modularity gives the fraction of within-family ties net of the expected fraction in a randomly “rewired” network with the same degree distribution, this difference would not be explained by disparities in the size or density of the two sub-networks.

As a further robustness check, I simulated 100,000 alternative partitions of the network such that 5 families are chosen at random to form a “cluster” and the modularity within the 5-family cluster is compared to the modularity in the remaining 19-family sub-network. The resulting modularity differences were as large as the observed N.Y.C. – non-N.Y.C. difference in less than one percent of the simulations, suggesting that the uniqueness of the N.Y.C. – non-N.Y.C. partition is highly robust to perturbation.

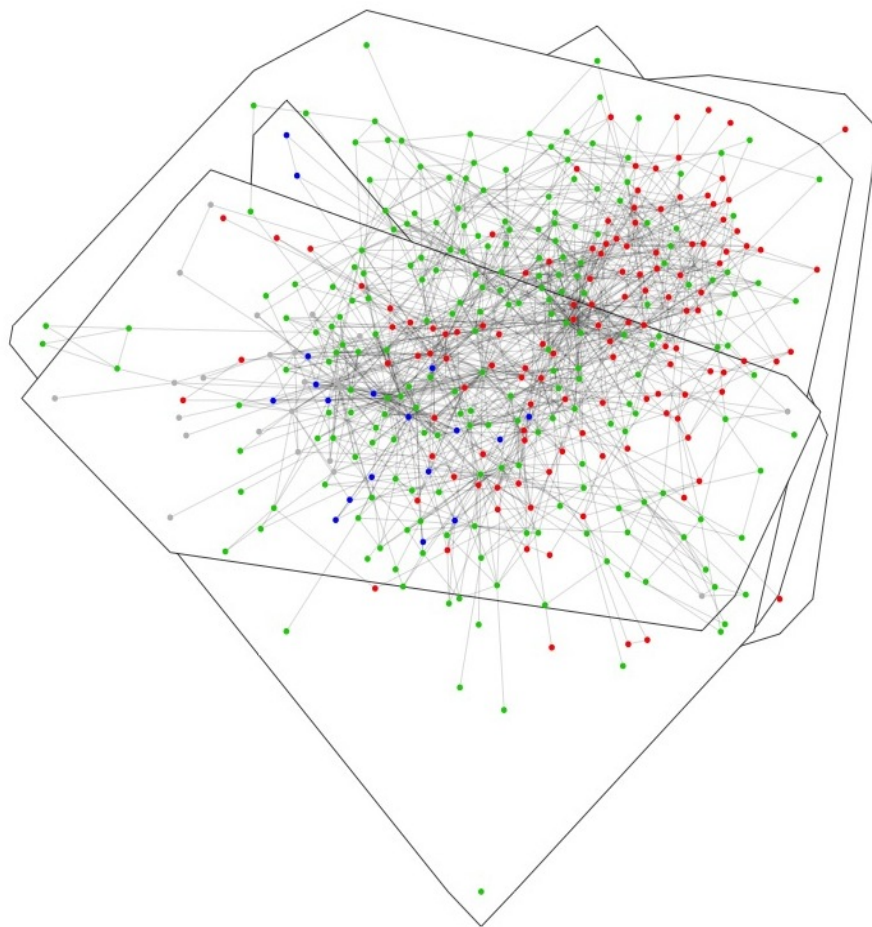
Compared to the baseline strength of family boundaries, then, the relations be-

**Figure 3.4:** Family boundaries outside of New York City



*Note: Networks are depicted using the Fruchterman-Reingold spring-embedding algorithm. Stacked polygons are drawn around the borders of each family.*

**Figure 3.5:** Family boundaries within New York City



*Note: Networks are depicted using the Fruchterman-Reingold spring-embedding algorithm. Stacked polygons are drawn around the borders of each family.*

tween New York City’s Five Families appear to represent a qualitatively different type of intergroup exchange. The New York families shared turf, had their own local commission of bosses separate from the national one, and were accustomed to interacting with one another within their common geographic niche, often forming alliances that could persist for decades. Consistent with a long literature in the social sciences suggesting that prosocial norms of exchange (even in a notoriously anti-social context such as the mafia) arise from dense and localized relations (e.g. Baldassarri and Grossman 2013; Macy and Skvoretz 1998; Nee and Oppen 2012; Uzzi 1996), we might expect that the New York context furnished opportunities to monitor potential exchange partners with greater granularity and thus featured lower costs for exchange outside of one’s own family.

As discussed above, I expect that non-Italians acted as network bridges in contexts where Italian mafiosi would have otherwise been least likely to have extensive exchange relations across family boundaries. Among New York City’s Five Families, with their dense networks of interfamily exchange, this is clearly not the case. And true to this expectation, I found in additional analyses that non-Italian brokerage generally did not bridge the N.Y.C. families. Yet, I also found that non-Italians played a key role in linking the N.Y.C. families to non-N.Y.C. families, effectively acting as “gatekeepers” (Fernandez and Gould 1994) who could either grant access to valuable affiliations within the Five Families or connect N.Y.C. mafiosi to contacts in other parts of the country.



### 3.6 Statistical Models of Network Position

This first set of statistical analyses tests the proposition that in high-commitment organizations—where the pursuit of brokerage violates social norms—brokerage positions should be disproportionately concentrated at the *high* and *low* ends of the status hierarchy within organizations. This is in line with what Phillips and Zuckerman (2001) term *middle-status conformity*—that high-status actors can deviate because they have greater insulation from peer judgment and low-status actors can deviate because they have little to lose. Meanwhile, middle-status actors (in this case, rank-and-file Italian mafia members) conform to behavioral expectations to avoid sinking lower in the eyes of peers. The high end of the status hierarchy can be broadly identified with the most elite ethnic Italian criminals in the network. Conversely, the low end of the status hierarchy can be broadly identified with ethnic non-Italian associates, who could never gain full membership in any mafia organization. It is notable that little work to date has actually sought to explain what types of actors sort into brokerage roles, as I attempt here (though see Cornwell 2009 for a previous study focusing on the health correlates of structural holes). To state the hypotheses more formally:

**H1a:** *Higher-status Italian criminals are more likely than lower-status Italian criminals to occupy brokerage positions.*

**H1b:** *Non-Italian criminals are more likely than comparable Italian criminals to occupy brokerage positions.*

To test hypotheses H1a and H1b, I model network bridging as a function of individual attributes that can be measured from the Bureau dossier. The two key independent variables are non-Italian ethnicity ( $N = 24$ ) and attendance at the 1957 national meeting in Apalachin ( $N = 62$ ). *Ethnicity* distinguishes categorical insiders from outsiders, since only ethnic Italians could ever attain full membership in a mafia family. *Apalachin attendance* usefully distinguishes higher- from lower-status Italian criminals. The Apalachin meeting included top-level representatives from nearly all families (the exceptions are Detroit, St. Louis, and Omaha), usually the boss of the family and several high-ranking lieutenants. Furthermore, we happen to have accurate records of who attended because the meeting was raided by law enforcement, producing many arrests. Attendees are clearly marked in the Bureau dossier. I also found qualitatively similar results when using measures of formal position in the family hierarchy, but these measures are only available for a subset of families.

Since narratives of ethnic succession frame Italian-American mafia families as successors to earlier Jewish syndicates (Bell 1953), we might suspect that the non-Italian criminals in the 1960 network were older than comparable Italians and therefore may have had more time to accumulate wide-ranging criminal connections. The same applies to Italian criminals who have had time to attain high rank within the family hierarchy. I adjust for age to account for both possibilities. I also distinguish immigrants from American-born criminals and include an indicator of main affiliation with one of the five New York City families to account for the distinctness of these groups compared to others.

I further include three dichotomous indicators capturing different patterns of activity in legal and illegal enterprises. First, I adjust for whether an individual had any reported ownership or managerial interests in legitimate businesses. I also include a similar indicator of whether an individual had any reported non-criminal occupation or profession. Unlike the ownership of legitimate businesses, which usually reflected a diversification of interest (Maas 1969), working in a non-criminal job would generally indicate only partial or low-level involvement in organized crime. Third, I adjust for whether the individual had a clean arrest record as of 1960; this categorization only applies to 6 percent of individuals and would help to distinguish pseudo-legitimate “front men” from other criminals. Due to the unique requirements of the drug trade, I also adjust for whether an individual had any reported involvement with narcotics. Finally, I adjust for each individual’s number of reported kinship ties—including both blood relations and intermarriage—to other mafia members and affiliates.

The favored measure among network analysts for the occupancy of brokerage positions is Freeman’s (1977) betweenness centrality, measured as the number of times that a node appears on a “geodesic”—the shortest (most efficient) network path—between two other nodes. Individuals who lay at the interstices of internally cohesive groups are expected to occupy many of the geodesics bridging those groups. Since betweenness centrality does not explicitly incorporate group membership, however, this approach also assumes part of what we want to problematize—the organizational boundaries that made families akin to network clusters. While Burt’s (1992) network constraint is another popular measure of brokerage, it focuses on egocentric network structure rather than group-bridging and is thus not suited to the present

analysis.

I employ two measures that account explicitly for network boundaries. For both measures, I only include bridge ties linking mafia families in different cities (as discussed in the preceding section). The first measure is simply a count of the number of bridges—edges that cross family boundaries—occupied by each actor. For the present case, this measure has the benefit of being both simple and robust, as I found when re-running the models with alternative metrics. Similar results obtained, for example, when each bridge is weighted according to the number of geodesics crossing through it. Bridging ties are, on the whole, relatively rare. The average mafioso has just 1.06 bridge ties in his network, and 61 percent of mafiosi have none.

For the second measure, I employed Gould and Fernandez’s (1989) “brokerage scores,” which count the frequency with which some node  $i$  is connected to nodes  $j$  and  $k$  who are not directly connected to one another. Gould and Fernandez’s overall brokerage score is found by summing four individual scores (or five in a directed network) corresponding to different types of brokerage, where the type depends on the group memberships of  $i$ ,  $j$ , and  $k$ . Two of these four scores—those for *gatekeeper/representative* brokerage and *liaison* brokerage—involve brokerage when  $j$  and  $k$  are in different groups. To measure brokerage that bridges group boundaries, I use the sum of these two scores.<sup>7</sup> Since I found similar results for both the bridge count and Gould-Fernandez brokerage score measures, the figures presented in the

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<sup>7</sup>The other two forms of brokerage—*coordination* within groups and *itinerant* brokerage—are interesting in and of themselves but less relevant to the present analysis. I also ran models of gatekeeper/representative and liaison brokerage separately and found similar results for both, suggesting that they could be combined for the present analysis.

main text focus for brevity on the simpler bridge count metric. However, the tabular results also include models using brokerage scores. Table 3.1 includes brief definitions and descriptive statistics for each variable in the analysis.<sup>8</sup>

Since the response variables are count measures, I estimate two-level mixed-effects overdispersed Poisson models with persons nested within mafia families (Gelman and Hill 2007).<sup>9</sup> In addition to the previously discussed covariates, the models include random-effects at both the individual and family level. The person-level random-effects account for overdispersion in the response distribution. The family-level random-effects adjust for overall between-family differences in the propensity (and opportunity) for bridging activity and allow us to instead focus on between-individual comparisons. More formally, I estimate models of the form

$$\lambda_{ik} = \exp(\alpha_k + \sum_{j=1}^M \beta_j X_{ij} + e_{ik}) \quad (3.1)$$

where  $\alpha_k$  is an intercept that varies by family  $k$ ;  $\beta_j$  is the coefficient for variable  $j$ ;  $X_{ij}$  is person  $i$ 's value for variable  $j$ ; and  $e_{ik}$  captures the residual variance across persons associated with the same mafia family. All models were estimated using Markov chain Monte Carlo (MCMC) methods and the “MCMCglmm” package in R (Hadfield 2010). Given the network structure of the data, significance tests based on standard errors are not appropriate. Following common practice, I rely instead on network simulation. To this end, I constructed 1,000 randomly “rewired” versions

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<sup>8</sup>There were virtually no missing data on the independent variables and covariates; age and immigrant status were imputed using hot-deck methods for one individual each.

<sup>9</sup>I also tested negative binomial specifications and found similar results.

**Table 3.1:** Variable definitions and descriptive statistics

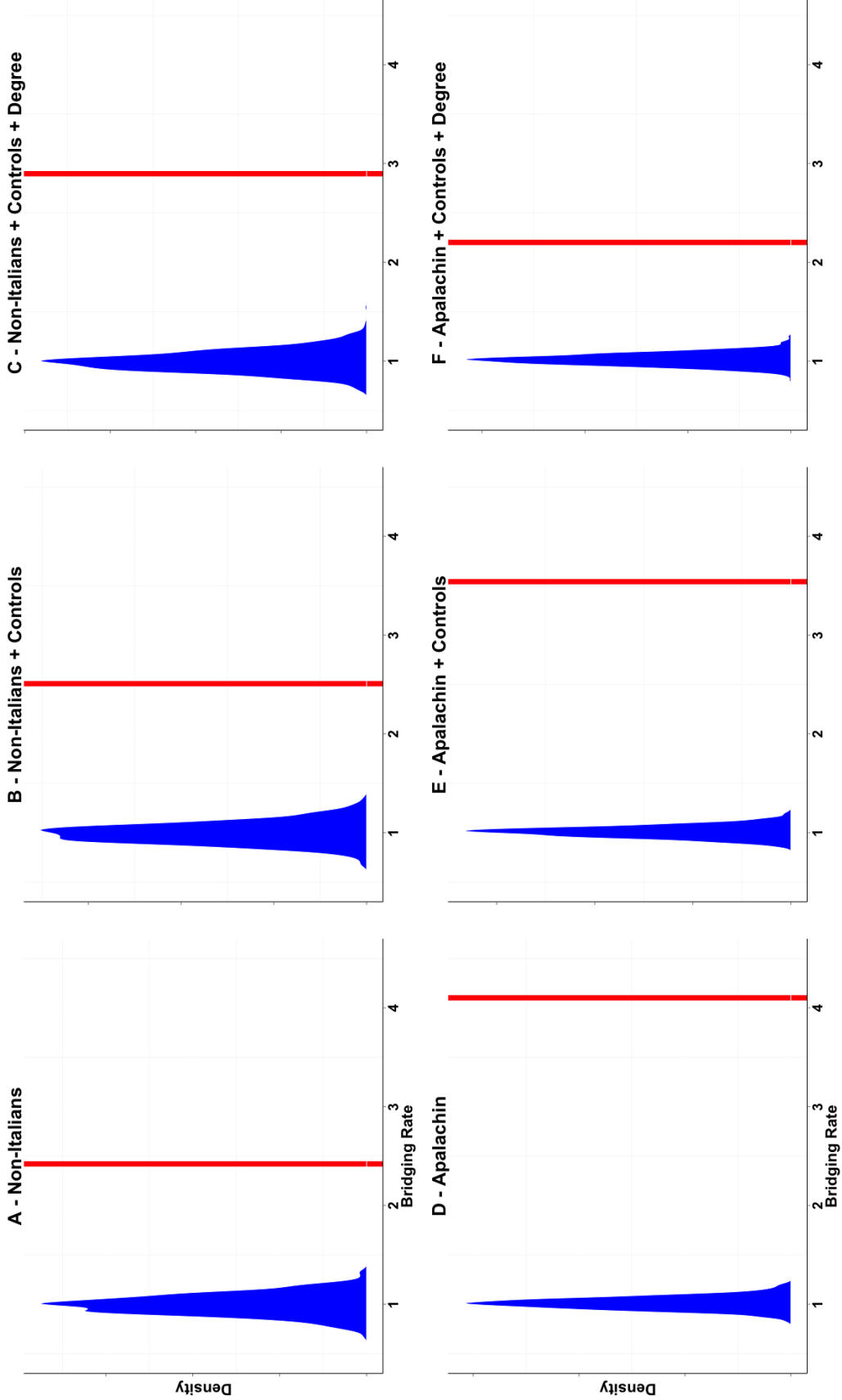
Variable	Description	Mean (s.d.)
Person-Level:		
Bridges	Number of bridge ties connecting families in different cities in $X$ 's egocentric network	1.06 (1.97)
Brokerage Score	Number of between-group brokerage instances using Gould-Fernandez scores	13.09 (62.40)
Non-Italian	Was $X$ ethnically non-Italian? (1 = <i>Yes</i> , 0 = <i>No</i> )	.03
Apalachin	Did $X$ attend Apalachin meeting? (1 = <i>Yes</i> , 0 = <i>No</i> )	.09
Age	Age in years as of 1960	52.02 (9.90)
Immigrant	Did $X$ immigrate to U.S.? (1 = <i>Yes</i> , 0 = <i>No</i> )	.34
Legitimate business	Did $X$ have any ownership interests in legitimate businesses? (1 = <i>Yes</i> , 0 = <i>No</i> )	.63
Non-criminal occupation	Did $X$ have any listed non-criminal occupation or profession? (1 = <i>Yes</i> , 0 = <i>No</i> )	.18
Clean record	Did $X$ have a clean criminal record? (1 = <i>Yes</i> , 0 = <i>No</i> )	.06
Drug trade	Was $X$ involved in the drug trade? (1 = <i>Yes</i> , 0 = <i>No</i> )	.57
Kin ties	Number of other mafiosi with whom $X$ shared a kinship tie	.58 (1.12)
Degree	$X$ 's egocentric network size	7.92 (6.63)
Family-Level:		
New York City family	One of New York City's Five Families (1 = <i>Yes</i> , 0 = <i>No</i> )	.21

of the observed network—preserving the original network’s size and density—and replicated each regression model for each of these “rewired” networks.

Figure 3.6 plots the main results from successive nested regression models. In each panel, the observed regression coefficient (transformed and presented as an incident rate ratio) is plotted as a vertical line while the distribution of comparison coefficients from the 1,000 simulated random networks is plotted as a histogram. While I do not further discuss the control variables here, full tabular results are provided in Table 3.2. Panels A and D portray coefficients for the relative occupancy of bridging positions, respectively, among non-Italians (compared to Italians) and among Italians who attended the national meeting at Apalachin (compared to Italians who did not). Both categories of individuals tended to occupy more bridging ties than their counterparts, although the observed difference for Apalachin attendees is much stronger than that observed for non-Italians ( $p < .001$  in both cases). These results support hypotheses H1a and H1b. Panels B and E add the full battery of control variables to the model, inducing little change in the non-Italian coefficient but reducing the incident rate ratio for Apalachin attendees from about 4.10 to 3.54.

Starker differences emerge when we control for degree, or total number of network ties, as shown in panels C and F. Since persons are now compared to others with the same overall network size, the results can be interpreted in relative rates of bridging. In other words, a positive coefficient indicates a higher *proportion* of bridging ties in a person’s network rather than just a higher *number* of such ties. The usefulness of this model is to distinguish actors who build their networks heavily or primarily

Figure 3.6: Occupancy of brokerage positions



Note: Each panel includes two pieces of information: (a) a solid line indicating the observed incident rate ratio for the independent variable of interest (Non-Italian ethnicity for panels A, B, and C or Apalachin attendance for panels D, E, and F); and (b) a histogram of comparison coefficients from regressions on 1,000 randomly perturbed versions of the observed network. All coefficients are significant at the .001 level. Results are based on Model 1 (for panels A and D), Model 2 (panels B and E), and Model 3 (panels C and F) from Table 3.2.



**Table 3.2:** Multilevel mixed-effects overdispersed Poisson regressions of network bridging

		Bridge Count			Gould-Fernandez Scores		
		(1)	(2)	(3)	(4)	(5)	(6)
	Non-Italian	.88***	.92***	1.06***	1.47***	1.67***	1.79***
	Apalachin	1.41***	1.26***	.79***	3.16***	2.80***	1.54***
	Age		.02***	.01*		.03***	.01*
	Immigrant		.12**	.21***		.27*	.46***
	Legitimate business		.64***	.48***		1.49***	1.01***
	Non-criminal occupation		.02	.15**		.28*	.54***
	Clean record		-.40***	.03		-1.01***	.14
	Drug trade		.17***	.06		.37***	.14
	Kin ties		.25***	.07**		.63***	.14***
	N.Y.C. family		-.91**	-1.16***		-1.36	-1.73**
	Degree			.09***			.23***
	Intercept	-.82	-1.26	-1.56	-1.30	-2.51	-3.13
Residual Variance:							
	Person-level	1.58	1.47	1.06	11.80	11.01	6.93
	Family-level	.45	.01	.05	1.23	.00	.04

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$  (two-tailed tests). Note:  $N = 707$ . Untransformed Poisson regression coefficients are shown.  $P$ -values are based on comparison to estimated coefficients in 1,000 randomly permuted versions of the observed network. Age is mean-centered.

around bridging ties from those who simply have many bridging ties by virtue of having many ties in general.

Interestingly, controlling for degree pushes the coefficients for non-Italian ethnicity and Apalachin attendance in opposite directions. Non-Italian brokerage becomes more pronounced after accounting for degree (non-Italians in the data set have average degree of 6.88 compared to the overall mean of 7.92). Degree-adjusted non-Italians are about 190 percent more likely to occupy an additional network bridge

than comparable Italians. Meanwhile, Apalachin attendees are about 120 percent more likely than their peers to occupy an additional network bridge after adjusting for degree, representing a decrease of about 37 percent compared to the coefficient in the non-degree-adjusted model. In contrast to non-Italians, who bridge groups despite lower overall degree, this means that Apalachin attendees bridge groups in substantial part due to simply being well-connected in general (the average degree among attendees is about 12.02).

### 3.7 Statistical Models of Brokerage and Status

The second analysis focuses on distinguishing the consequences of occupying brokerage positions for either high-status insiders or ethnic outsiders. The high-status insider might maintain bridging ties simply because his or her status within the group affords greater freedom from the potential reprobation of peers. For the outsider, in contrast, brokerage provides a potential path to higher status within the group. By controlling key bridges, the outsider can facilitate transactions that group members may not be equipped to pursue themselves for fear of appearing uncommitted. More formally:

**H2a:** *For elite Italian criminals, occupancy of brokerage positions between groups is not associated with higher status within groups.*

**H2b:** *For non-Italian criminals, occupancy of brokerage positions between groups*

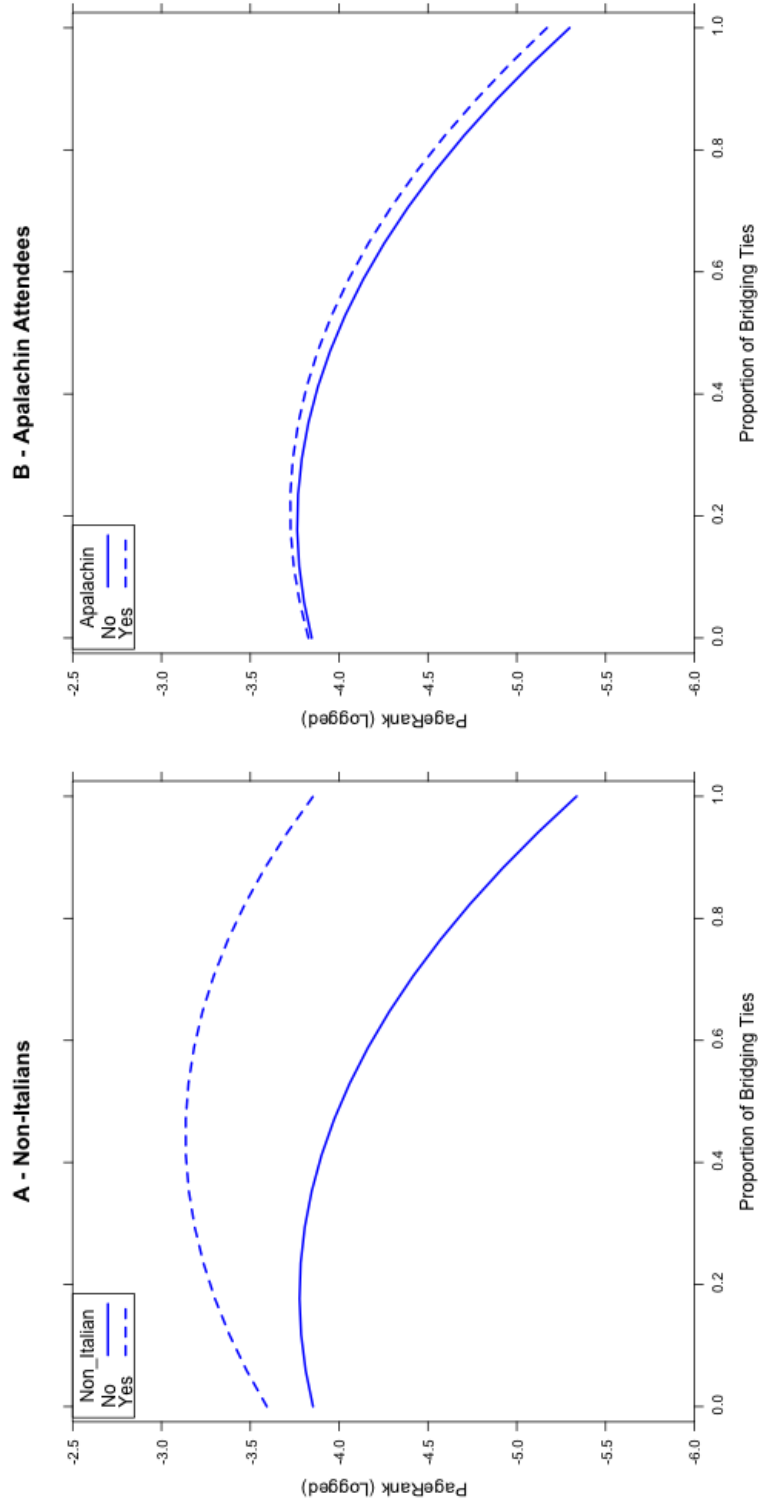
*is associated with higher status within groups.*

To test hypotheses H2a and H2b, I rely on the Google *pagerank* scores developed in Chapter 2 again to measure each mafioso’s relative status within the family network. These directed nominations convey useful information on the “pecking order” as perceived by those who constructed the dossier. For example, while a boss would usually be listed prominently as a criminal associate of numerous individuals within his family, a low-level hoodlum in the same family would be very unlikely to appear in his boss’s list of associates.

Figure 3.7 graphically depicts the results of a multilevel linear mixed-effects model in which *pagerank* (logged to reduce skewness) is regressed on the proportion of bridging ties in each person’s egocentric network. The model includes a quadratic term for bridging and interaction effects with ethnicity and Apalachin attendance. All covariates from the previous models are also included. I use the proportion of bridging ties (controlling for degree) so that the results can be interpreted in terms of the relative returns to building one’s network around bridging rather than parochial ties. In line with the hypotheses, the results suggest that bridging ties were an overall net negative to one’s rank within the family. For non-Italians, however, bridging ties were a net positive up until a high threshold after which the returns decrease. This nonlinearity makes intuitive sense and suggests that the highest-ranked non-Italian broker would be someone who managed to remain embedded within a core family while also forming key extra-local ties.

Of course, the causal pathway could arguably be reversed. Perhaps non-Italians

**Figure 3.7:** Bridging and status by ethnicity and Apalachin attendance



*Note: Lines portray fitted values from a multilevel linear mixed-effects model of logged pagerank on the proportion of bridging ties in each person's egocentric network interacted with ethnicity and Apalachin attendance. In Panel A, non-Italians are compared to otherwise similar Italians. In Panel B, Apalachin attendees are compared to otherwise similar Italians. The model includes all main effects from Table 3.2, including degree. All terms not shown are held constant.*

who had high stature within families were better known and therefore more equipped to become bridges between families. Yet, this narrative is also consistent with the theoretical argument—why would an Italian criminal of comparable stature be so much less likely to occupy bridging positions if not for an underlying incentive structure that favored parochial over bridging social capital? The key to the hypothesis lies more in the presence of an association than in its causal direction. Perhaps non-Italians were empowered to the extent that they could provide brokerage. Or, they may have sorted into brokerage positions more easily to the extent that they were already powerful. The likeliest answer is that the observed patterns reflect both of these dynamics. The more important question is whether the occupancy of brokerage positions was sufficiently associated with status such that brokers would have plausibly been capable of exercising influence over multiple families and enabling meaningful coordination across family boundaries.

### **3.8 Family Closure and Brokerage**

The third analysis focuses on the interaction between institutional and network closure, where the latter is defined as the absence of bridging ties between groups. Even in high-commitment organizations where members are rewarded for undivided commitment rather than maintaining diverse connections, there can still be strength in numbers if rank-and-file members frequently engage with others outside the group. In such contexts, outsiders are unlikely to provide the kind of direct access to key

resources that one could gain from doing business with a strongly-connected insider with well-placed bridging ties. The returns to outsider brokerage, in other words, are predicted to depend especially on the relative absence of brokerage ties among group members as a whole. More formally:

**H3a:** *For elite Italian criminals, occupancy of brokerage positions is associated with higher status in families with more open networks.*

**H3b:** *For non-Italian criminals, occupancy of brokerage positions is associated with higher status in families with more closed networks.*

To test hypotheses H3a and H3b, I develop a network measure capturing variation across families in the extent to which members rely predominantly on within-group rather than between-group ties, in line with the longstanding view that groups can be defined by the affiliation patterns of their members (Breiger 1974). More technically, the crux of the measurement strategy lies in a comparison between the empirically observed network and the counterfactual network we would expect to observe if network ties were formed purely by chance. The most closed mafia families feature relatively many more within-group ties than expected given random sorting. More formally, the observed closure in family  $k$  is

$$C_k = \frac{\sum_i \sum_j m_{ij, f(i)=f(j)}}{\sum_i \sum_j m_{ij, f(i)=f(j)} + \sum_i \sum_j m_{ij, f(i) \neq f(j)}} \quad (3.2)$$

where members of family  $k$  are indexed by  $i$ , network alters (in family  $k$  and otherwise) are indexed by  $j$ , the family affiliation of node  $i$  is denoted as  $f(i)$ , and network ties (with values 0 or 1) are denoted by  $m$ . Equation 3.2 simply states that the degree

of observed closure in family  $k$  is the proportion of network ties involving any member of  $k$  that occur within the group. If no group members have any extra-family bridge ties,  $C_k = 1$ ; if group members have nothing but bridge ties,  $C_k = 0$ .

We expect larger groups to score higher on this closure metric by chance—the larger the proportion of nodes belonging to family  $k$ , the greater the probability that even a randomly formed network tie would link two nodes  $i$  and  $j$  who belong to the same (large) group. However, a measure of group closure should express the extent of observed closure in group  $k$  compared to that we would expect by chance. Formally,

$$C_k^* = C_k - E(C_k) \quad (3.3)$$

where the expected level of closure in family  $k$  is  $E(C_k)$ . In order to compute this expected value, we can compare the edge values in the observed network to those in a “null configuration” of the same network in which ties are formed randomly but the degree distribution of the original network is preserved. Following Newman (2006), we can assume that the expected probability of observing a network tie by random chance for any two nodes  $i$  and  $j$  is

$$E_{ij} = \frac{d_i d_j}{2m} \quad (3.4)$$

where  $d_i$  is the network degree of node  $i$  and  $m$  gives the total number of observed network ties.  $E(C_k)$  is found simply by substituting the null configuration values  $E_{ij}$  for every possible node pair into Equation 3.2. Finally, in order to focus on deviations from perfect closure (a more natural reference point when average closure

is high), I use

$$O_k = 1 - C_k^* \tag{3.5}$$

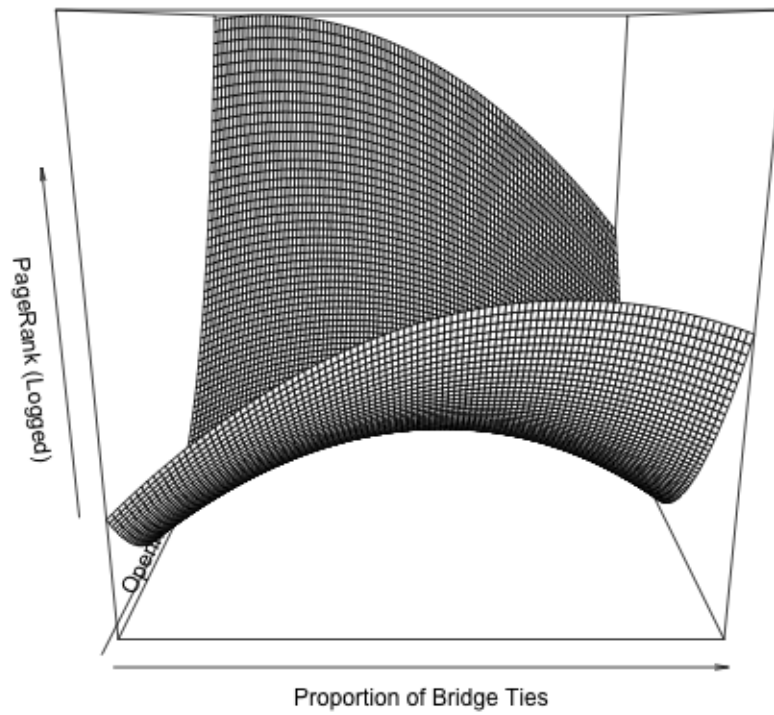
as a measure of group openness, where low values indicate closure and higher values denote increasingly open group boundaries.

For this analysis, I re-estimate the model used to generate Figure 3.7 with the addition of an interaction term between the measure of group openness and the proportion of bridging ties in each person's network. In addition to all control variables included in previous models, I also adjust for family size in order to account for the possibility that smaller families will have greater need for collaboration and thus a greater proportion of outgoing ties (e.g. Gambetta 1993). Figure 3.8 plots predicted values from these models for non-Italians while Figure 3.9 plots predicted values for Apalachin attendees. Both sets of results support theoretical expectations and suggest striking differences in the way that group structure organizes patterns of brokerage. For non-Italians, proportion of bridging ties is positively associated with rank in closed families and negatively associated with rank in open families. For Apalachin attendees, the opposite pattern holds—bridging is negatively associated with rank in closed families and positively (though not strongly) associated with rank in open families.

Given the relatively small number of families, of course, we should be cautious in interpreting both patterns. At the least, we can say that the results are certainly consistent with expectations and suggestive of a mechanism to explain the social organization of brokerage—namely, that network closure creates opportunities for

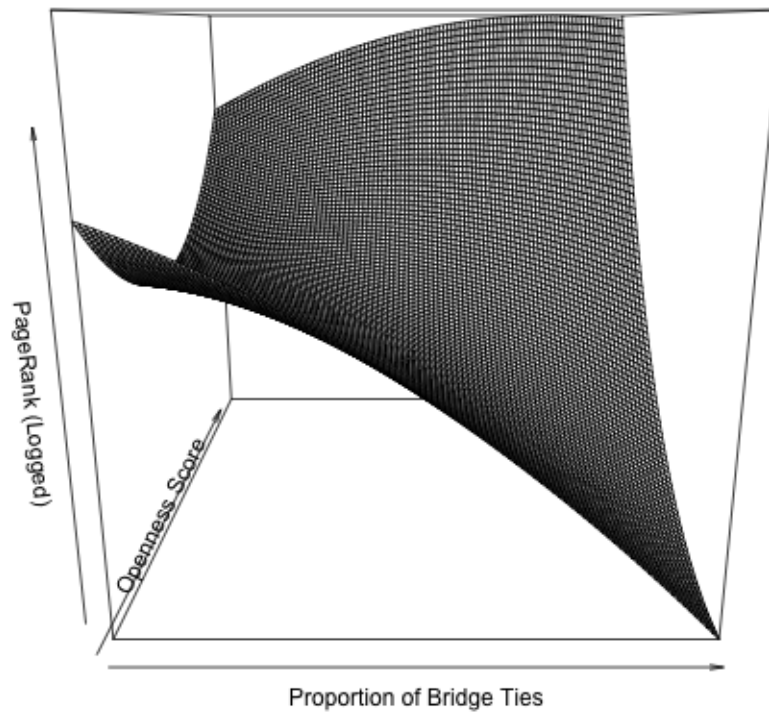


**Figure 3.8:** Bridging, family openness, and status for non-Italians



*Note: Points represent fitted values from a multilevel linear mixed-effects model of logged pagerank on the proportion of bridging ties in each person's egocentric network interacted with both the family openness score and ethnicity. Family openness increases along the y-axis while pagerank increases along the z-axis. The model includes all main effects from Table 3.2 (including degree), as well as quadratic terms for bridging and openness and an adjustment for family size. All terms not shown are held constant.*

**Figure 3.9:** Bridging, family openness, and status for Apalachin attendees



*Note: Points represent fitted values from a multilevel linear mixed-effects model of logged pagerank on the proportion of bridging ties in each person's egocentric network interacted with both the family openness score and Apalachin attendance. Family openness increases along the y-axis while pagerank increases along the z-axis. The model includes all main effects from Table 3.2 (including degree), as well as quadratic terms for bridging and openness and an adjustment for family size. All terms not shown are held constant.*

brokerage by outsiders that do not translate for otherwise comparable insiders. Conversely, the returns to brokerage by outsiders disappear when insiders are normatively or practically capable of pursuing brokerage themselves.

### **3.9 Extending the Argument**

To this point, I have based my argument for outsider brokerage around examining non-Italians as a critical “test case.” Non-Italians present an appropriate test because of the consistent and visible way in which they were excluded from official membership in mafia families. Yet, there are limits to this case. Of 707 individuals in the data, only 24 were non-Italian. While I have shown that these non-Italians were disproportionately involved in brokerage activities between families, we could still remove these 24 individuals from the network without dramatically decreasing the overall integration among families.

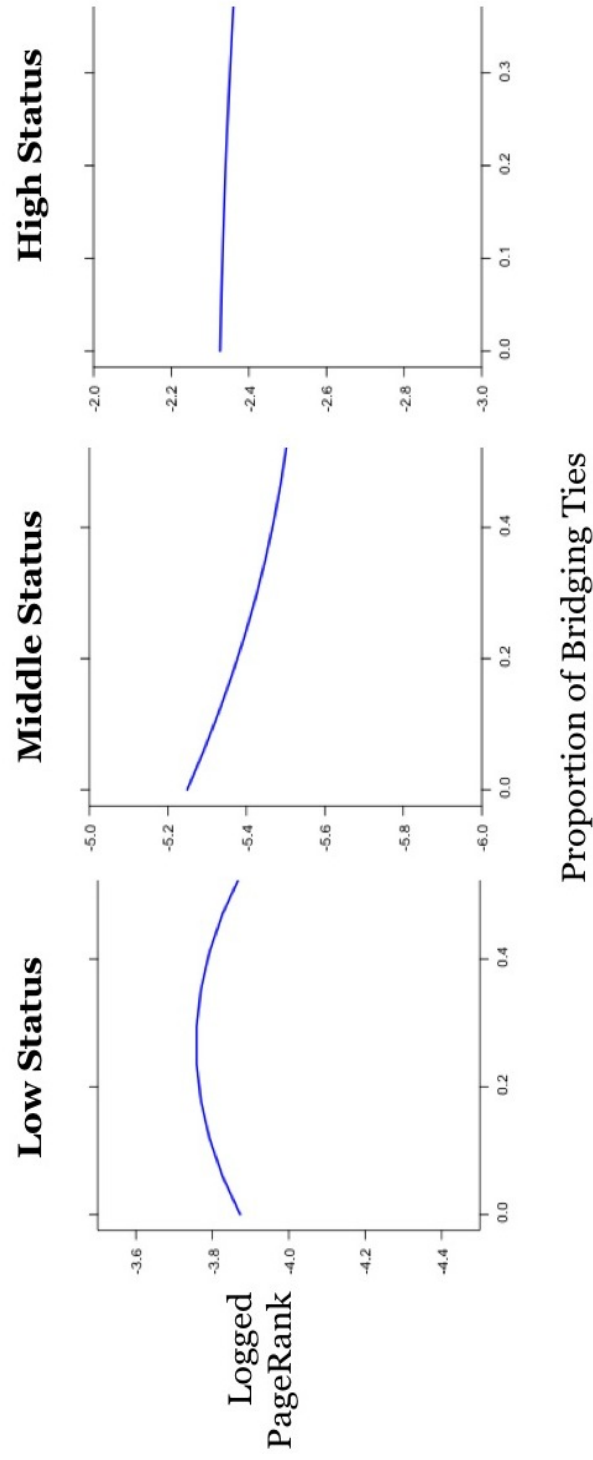
As a further test of the outsider brokerage argument, I examine whether the differences observed between non-Italians and Italians also extend to gradations of brokerage among Italian criminals of varying status. Again, by conceiving of brokerage as a form of deviance, we might expect to see a pattern of “middle-status conformity” in which either low- or high-status—but not middle-status—criminals are most likely to occupy brokerage positions in the inter-family network. Recall that Figure 2.6 in the previous chapter provided evidence to exactly this effect. In line with the observations presented earlier in this chapter, however, we should also

expect that brokerage is positively associated with status *among relatively lower-status actors* but not among middle- or higher-status actors. If we were to take two otherwise similar actors, both of whom occupy relatively marginal positions within the hierarchy of the mafia family, we should expect the one with more brokerage ties to have relatively higher status. Among the class of mafiosi relegated to marginal positions, in other words, brokerage at least provides some kind of pathway to higher status within the family. Figure 3.10 confirms this pattern. Among lower-status mafiosi, whether Italian or non-Italian, there is a positive association between bridging and status. Yet again, this association attenuates above a threshold such that the optimal arrangement is to have a balance between in- and out-group ties. Among middle- and high-status mafiosi, in contrast, the bridge-status association is negative or null.

### 3.10 Summary and Discussion

How do organizations obtain access to valued resources without diluting the loyalties and identities of their members? Network analysts suggest focusing on the boundary-spanning activities of brokers who bridge gaps in social structure. In many contexts, however, brokers are viewed with suspicion and distrust rather than rewarded for their diversity of interests. In the case of mafia families, this chapter has documented a network ecology in which a small number of brokers—often, surprisingly, ethnic outsiders excluded from formal membership—bridged otherwise disconnected islands

**Figure 3.10:** Bridging and status by status quantiles



*Note: Lines portray fitted values from a multilevel linear mixed-effects model of logged pagerank on the proportion of bridging ties in each person's egocentric network separately for low- (lowest quantile), middle- (second and third quantiles), and high-status (highest quantile) actors. Quantiles are based on pagerank within the family network centered on the mean score for each family. Since the model already accounts for between-family differences, the dependent variable is not family-mean-adjusted. This is why the y-axes do not directly reflect the low-, -middle-, and high-status divisions. Models includes all main effects from Table 3.2 except for degree. All terms not shown are held constant.*

of criminal activity to gain power within exclusive mafia circles.

In situations where internecine exchange was uncommon, this analysis suggests that the mafioso could fulfill both competing roles without contradiction by embedding interfamily exchange in a web of brokerage maintained by ethnic outsiders who were nonetheless known and trusted by Italian mafiosi. Doing so would provide the mafioso with access to other families, albeit through a mediating broker, without compromising the appearance of loyalty to his own family. Yet, it is worth also considering the precariousness of the position held by the non-Italian broker. Lacking membership in a solidary group, he would be left largely unprotected in case of a business dispute or aggression from a better-embedded Italian associate. While the ethnic outsider in mafia business pursued the most advantageous position available to him, in other words, this is not to suggest that the position was a particularly secure one.

The analysis undertaken here has several notable limitations. Since network ties are not measured longitudinally, we have only been able to see a snapshot—albeit a rich one—of the network rather than the evolution of this structure over time. Rather than behavioral traces of economic exchange between mafiosi, we have had to rely on reported ties of criminal association. The benefit of this data structure has been that the ties represent the widest possible set of network “pipes” through which past, present, or even future exchanges could have occurred (Podolny 2001). Furthermore, there is at least one reason to think that the role of non-Italians as brokers might be even larger if we were able to observe individual instances of economic exchange

among mafiosi. Namely, while pursuing interfamilial exchange through an Italian superior in one's own family may provide a more direct "bridge," the patronage tax (i.e. the superior's "vig") associated with using that bridge may also be higher than if one were to use a non-Italian intermediary. Rank-and-file Italians may have preferred using non-Italian intermediaries when doing so allowed them to circumvent the norms of the family hierarchy.

## CHAPTER 4

### POWER AND PARIAS

In Chapter 2, we gained perspective on the American Mafia as a small-world structure balancing high local closure with extensive national connectivity. In Chapter 3, we saw that this structure overlay a division of network labor in which marginal actors in particular—including both non-Italian criminals excluded from official membership and Italian criminals concentrated in the lower rungs of the family hierarchy—took up the role of network bridges between otherwise disconnected or only loosely connected families. In this final empirical chapter, I will examine a second key explanation for network integration across mafia families: the existence of a decentralized but nationally-connected network of mafia criminals engaged in the distribution of illicit narcotics.

Historically, the mafioso's "bread and butter," so to speak, has been the market for private protection. The connection between the mafia and the protection racket is such that Gambetta (1993) *defines* the mafioso as a social and economic actor in terms of his status as an entrepreneur of protection. Note that the term "protection" is used here loosely—whatever material protection may actually be provided to the mafioso's client, the mafioso mainly demands that the client pay in order to protect him or herself *from the mafia*. In this way, the mafioso is a rent-seeker. The mafioso demands rent from the business owner, who complies in order to avoid damage to her business, the fear of which is implied by the mafioso's capacity for violence, which is in turn reinforced by the mafioso's affiliation with the feared local family, which



maintains (by force, if necessary) a monopoly over the local protection racket in order to ensure that any “wannabe” protection entrepreneur must pay a cost to enter the market.

As an entrepreneur of protection, however, *entrepreneurialism* is arguably just as central to the mafioso’s identity as is *protectionism*. Chief among the lucrative industries and rackets to emerge outside the realm of private protection was the drug trade, seemingly introduced to the realm of mafia business by none other than Salvatore “Lucky Luciano” Lucania, the reputed “boss of bosses” in New York City and architect of the American Mafia’s early rise to power, in the second decade of the 20th century (Hortis 2014). While Lucania continued to surround himself with notable drug traffickers, his personal involvement in the drug trade was later disregarded as a “youthful indiscretion, or as a sign of his disrespect for Mafia tradition” (ibid., p. 125). Further illustrating the ambivalent relationship between mafia leaders and the drug trade, influential New York boss Joseph Bonanno is quoted in his memoir as stating that the mafia “tradition outlaws narcotics. It had always been understood that ‘men of honor’ don’t deal in narcotics” (ibid.). There is every reason to suspect that this norm was more practical than moral: the drug trade brought unwanted attention, including newly dogged investigatory efforts from federal agencies (Maas 1969). Requiring non-local (and usually international) transportation and distribution of goods, no local family could effectively oversee and regulate the industry. The drug business brought substantial risk—and negative externalities—with distinctly uncertain rewards for the organization.

Regardless of Bonanno's disavowal, what is clear is that many individual mafiosi were heavily involved in the drug trade by the middle of the 20th century, so much so that the U.S. Senate's 1963 report on the Mafia was entitled *Organized Crime and Illicit Traffic in Narcotics* and the primary federal agency investigating mafia crime was the Federal Bureau of Narcotics (the network data used throughout this dissertation were compiled by the same agency). Fully 57 percent of the mafiosi recorded in the data had at least some connection to the drug trade. In the five New York City families, which by size, location, and age we might expect to hew most closely to tradition, the prevalence actually *increases* to 76 percent. But as Gambetta (1993) explains, investment in this particular industry was made on a strictly individual rather than organizational basis: "the mafia never dealt in drugs; only individual mafiosi did. They invested their own money or invested on behalf of others, but nobody guaranteed that investment for them. Each man of honor had to supply his own safeguards for his own funds" (p. 238). In his published confession, New York mafioso Joseph Valachi similarly reports independently contacting a source in Marseilles to import heroin under the nose of his own family (though after his *capo*, Anthony Strollo, discovered the deal, he too had to receive a cut or "vig" in exchange for his cooperation).

Why did individual mafiosi get so heavily involved in the drug trade despite the reticence and approbation of mafia elites? A trivially simple answer is that it was profitable. Valachi reports purchasing heroin in France at a rate of \$2,500 per kilo and selling it in the United States for \$11,000 (Maas 1969). Yet this account overfits the data in important ways. If the profit motive were a sufficient explanation,

why did not *all* mafiosi go into the drug trade? To understand the origins of this particularly consequential form of entrepreneurial deviance, we must again examine mechanisms embedded in the social and institutional organization of mafia families. In this chapter, I argue that rigid power hierarchies within individual families left many lower-level members marginalized from profitable rackets. Consequently, these mafiosi flocked in droves to the drug trade as an alternative path to enrichment, forming a largely independent distribution network that stretched across familial, regional, and even national boundaries.

In this way, the rise of the drug trade is best understood as a case of endogenous—or bottom-up—rather than top-down institutional change (DellaPosta et al. 2017). Individual mafiosi were drawn to the industry sensing an entrepreneurial opportunity relatively free from the interference and control of family organizations. The greater the number of mafiosi involved, the greater the ease of coordination, allowing a self-reinforcing diffusion dynamic. And even when family leaders declined to endorse their members' involvement, they were also largely powerless to prevent it due to the high gains perceived by individual mafiosi and the sheer number of mafiosi participating in the industry (Gambetta 1993).

The rest of the chapter proceeds as follows. In the next section, I use network visualization to demonstrate the extent to which the drug trade—unlike others—linked together individuals from disparate regions and families. Following this demonstration, I move to explain sources of individual participation in the mafia drug trade. This explanation (briefly sketched above) is then tested in a series of statistical anal-

yses. I conclude again by summarizing the chapter.

## 4.1 The Drug Trade and Network Integration

I have suggested that the drug trade was unique in the extent to which it gave rise to integration and exchange across geographic and organizational boundaries. This point can be illustrated by examining the sub-network of mafiosi who were involved in the drug trade, shown in Figure 4.1. To be clear, we cannot know that all or even most of the individual network *ties* in this graph were used to facilitate drug trading, since the network ties listed by the Bureau of Narcotics are defined broadly as ties of criminal association rather than narrowly by collaboration in specific industries and purported transactions. We do, however, know the rackets and industries in which individual mafiosi were known to be involved, as reported in the dossier. By looking at the full set of ties linking together individuals who were mutually involved in the drug trade, then, we can see the way in which participation in this particular industry mapped onto the broader set of social and economic relationships among mafiosi and their associated families. In this regard, what stands out in Figure 4.1 is the extensive reach of the drug trade among mafiosi and the level of integration and interconnection across family boundaries.

To better understand how striking this pattern is, we can compare it to other popular mafia industries. While no other single racket featured as broad-based participation as the drug trade, Figure 4.2 graphs the sub-networks of mafiosi involved in the three next most popular rackets: (a) gambling, bookmaking, and sports bet-

**Figure 4.1:** Sub-network of mafiosi involved in the drug trade

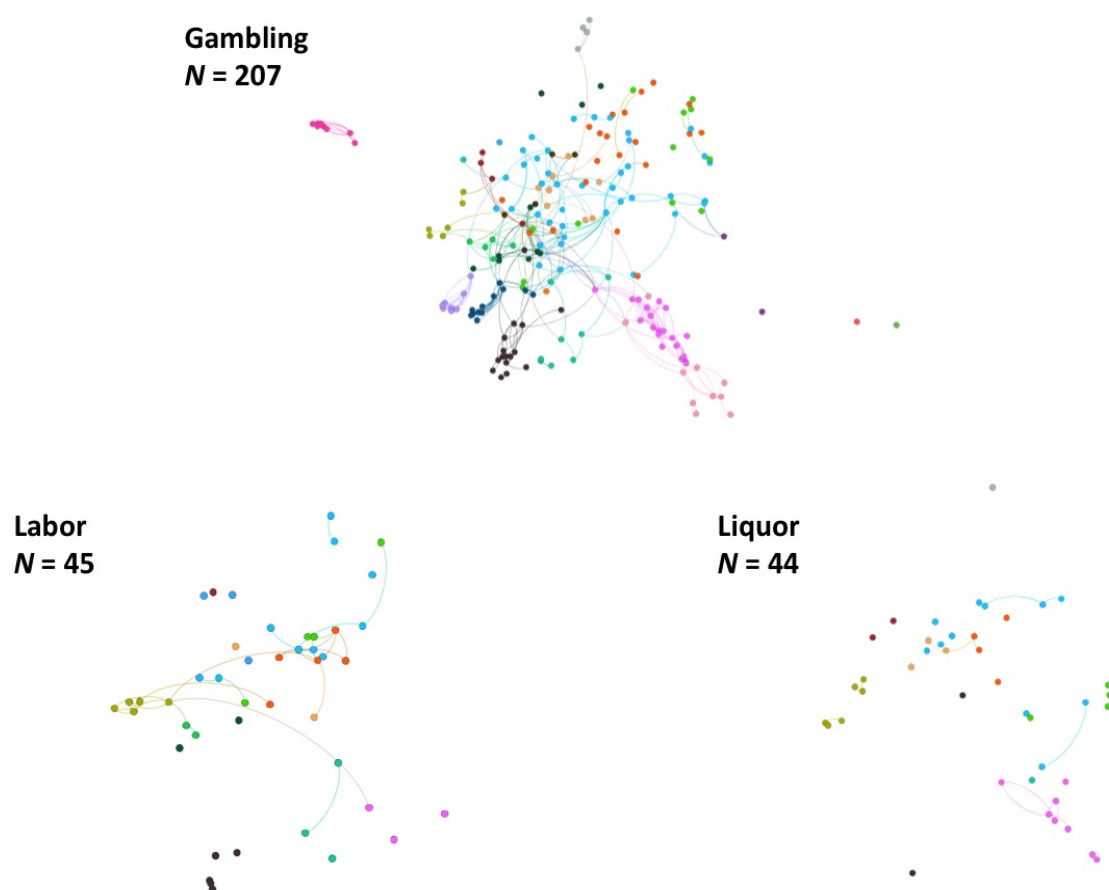


*Note:  $N = 404$  nodes colored according to family membership.*

ting; (b) labor racketeering; and (c) liquor. The mafia gambling industry provides an especially instructive comparison. Like the drug trade, it featured extensive and broad-based participation (though still only roughly half as many participants). Unlike the drug trade, however, the gambling racket was dominated by local ties within families. When we compute Newman and Girvan’s (2004) *modularity* metric for these two sub-networks, we find that modularity  $Q = .66$  for the gambling sub-network and  $Q = .39$  for the drug-trading sub-network, indicating that ties between gambling racketeers were dramatically more likely to occur among co-members of the same family. (Recall that modularity adjusts for the size and degree distribution of the network, meaning that this difference is also not attributable to the larger size of the drug-trading sub-network.)

This pattern makes intuitive sense given the nature of each industry. Whereas drug-trading required moving goods across geographic space, the gambling racket involved close collaboration in managing bookmaking, lotteries, and other forms of betting and gambling within a locally defined space. Valachi’s description of the “numbers” racket (Maas 1969)—a lottery in which bettors attempt to predict three digits determined pseudo-randomly (e.g. by the final three digits of the total amount traded that day on the stock market)—illustrates the kinds of local ties developed in the context of gambling racketeering. When Valachi saw bets coming in heavily on any one set of numbers for a particular day, he would insure himself against potential damage by placing his own bet on the same numbers with a different bookmaker. In other words, the racketeers agreed to form ties in order to spread costs across the local gambling market. The costs that required managing in the drug trade were clearly

**Figure 4.2:** Sub-networks for gambling, labor, and liquor industries



*Note: Nodes colored according to family membership.*

different, involving the identification of suppliers in other regions or countries and the effective transportation of goods from one place to another. Even if mafia leaders *wanted* to monopolize and manage the drug trade in the way that they managed the gambling racket and other industries, doing so would have been virtually impossible.

## 4.2 Hierarchy and Entrepreneurial Deviance

What, then, accounts for the broad-based nature of mafia participation in the drug trade? This is often intuitively viewed as evidence that mafia families *lacked* formal organization—otherwise, how could so many mafiosi blatantly disregard the preferences of their superiors? A subtler explanation, however, is that mafiosi were driven into the drug trade precisely *because* of the way families were organized. Rather than lacking organization, well-defined hierarchies and power structures within mafia families left many members in a position where they would gain more by forming their own “private orders” beyond the tight internal labor markets of the family-controlled rackets.

A recorded tape of two New Jersey mafiosi, Anthony Russo and Sam Decavalcante (the FBI tapped Decavalcante’s phones between 1961 and 1965 and released the transcripts publicly in 1969), helps to illustrate the forces that led rank-and-file mafiosi into the drug trade. Russo opines to Decavalcante:

“Half these guys are handling junk. Now there’s a law out that they can’t touch it. They have no other way of making a living so what can they do? All right, we’re fortunate enough that we moved around and didn’t have to resort to that stuff. We had legitimate things going as well as horses, numbers, and everything. What are the other poor suckers going to do?” (quoted in Abadinsky 1981, p. 24)



Russo's explanation is that mafiosi went into the drug trade when they could not otherwise secure enough profit from the traditional rackets, examples of which include legitimate businesses, sports betting, and the numbers lottery. It is notable that the alternative rackets Russo lists are distinctly local in nature, and thus more amenable to control and regulation by the family. Thus, the mafiosi who would be excluded from such rackets would be those who occupy a less advantageous position within the family's web of hierarchical patron-client relationships.

Gould (1996) argues that patronage systems have two countervailing effects: (a) co-opting those who occupy beneficial positions in the patron-client structure into cooperation; and (b) pushing those who occupy disadvantaged positions in the same structure into resistance. In the case of the mafia drug trade, I expect that mafiosi who occupied weaker positions in the patron-client structure of the family had fewer opportunities for material gain and advancement within the organization and sorted into the drug trade as an alternative path to enrichment. To state this proposition more formally,

**H4:** *Higher-status mafiosi were less likely to be involved in the drug trade.*

In the Sicilian *Cosa Nostra*, it was common for numerous mafia families to compete for influence and territory within the same city. In 1990, for example, the city of Palermo alone featured nearly 50 families; Agrigento featured nearly 40 (Gambetta 1993, p. 291). These families tend to be small and clan-like in structure. However, American mafia families emerged by the mid-20th century with a distinctly different organizational structure. Rather than many small families occupying the same ge-

ographic territory, the American Mafia featured a much smaller number of families (the total number across the United States being less than the number of families in Palermo alone) with much larger individual memberships. The two largest New York City families (Genovese and Lucchese) each feature more than 100 of the 707 mafiosi in the data set, making these groups resemble hierarchical multidivisional firms more than small, secretive clans.

One consequence of such elaborated, multilevel hierarchies is to effectively insulate the organization's top-level leadership from the day-to-day activities of rank-and-file members (Blau 1968). This had two practical implications. First, the existence of a rigid and coherent hierarchy implied for lower-level members that the path to advancement within the family would be more difficult. Within an inflexible hierarchical structure, then, the incentives for individuals occupying mid- or lower-level positions to seek opportunities outside the family's patron-client structure were greater. Second, the existence of multiple levels separating family leadership from lower-level subordinates allowed the latter greater room to maneuver without direct supervision from the former. As Erikson and Bearman (2006) point out, "in the absence of control, rational agents pursue their own private interests, most often free riding off of collective resources provided by principals" (p. 203). In the case of the mafia drug trade, individual mafiosi insulated from the direct supervision and control of family leaders used the legitimacy and network connections garnered through affiliation with the family to wade into an alternative private order of drug-traders. Stated more formally, I expect the following:

**H5:** *More hierarchical families featured higher rates of participation in the drug trade.*

### 4.3 Measuring Hierarchy

How do we distinguish families on the basis of having *more* or *less* hierarchical structures? Recall that in Chapters 2 and 3 we used the set of directed nominations from the criminal profiles provided by the Bureau of Narcotics dossier to capture the relative “pecking order” of each family, following the principle that a mafiosi  $A$  who appears in  $B$ ’s list of criminal associates when  $B$  does not also appear in  $A$ ’s list of associates was likely to be a higher-priority and more influential actor than  $B$ . We can estimate the extent of hierarchical relationships within each of the 24 families by again applying this principle.

As before, I separately analyze the network of directed nominations for each family. I begin this analysis by removing all sets of mutual nominations in which  $A$  and  $B$  both appear in one another’s lists of criminal associates, since these mutually directed ties will not directly tell us about hierarchical relations within the family. Using the remaining set of non-mutual relationships, I measure the *coherence* of the family hierarchy based on the presence of cycles among the non-mutual nominations. A cycle occurs when  $A$  nominates  $B$  who nominates  $C$  who nominates  $A$ . In the presence of clear and rigid hierarchies among actors, such cycles should not occur.  $A$ ’s un-retuned nomination of  $B$  implies that  $B > A$ . Similarly,  $B$ ’s un-retuned

nomination of  $C$  implies that  $C > B$ . By the transitive property, then,  $A$  cannot be ranked higher than  $C$ ; yet,  $C$ 's un-retuned nomination of  $A$  implies exactly this. In a group featuring flat and horizontal relationships among actors and the absence of a clear hierarchy, such cycles may frequency occur. In a group featuring vertical relationships and a clear hierarchy, they should be rare or non-existent.

More formally, for each actor  $i$  in family  $f$  I measure the extent of non-hierarchical cycles in which  $i$  is involved as

$$C_{if} = \frac{\sum_{j \neq i} \sum_{k \neq i, j} a_{ij} a_{jk} a_{ki}}{d_i(d_i - 1)} \quad (4.1)$$

where  $j$  indexes all alters whom  $i$  nominates;  $k$  indexes other alters;  $a_{ij}$  is a binary indicator of the presence or absence of a directed nomination from  $i$  to  $j$ ; and  $d_i$  is the number of outgoing nominations from  $i$ . Stated differently,  $C_{if}$  measures the number of non-hierarchical cycles  $i$  generates relative to the number of possible such cycles based on  $i$ 's nominations to other actors. For cases in which  $i$  lacks any outgoing un-retuned nominations ( $d_i = 0$ ),  $C_{if} = 0$  to indicate the absence of any non-hierarchical cycles. Since a higher score indicates the relative *absence* of hierarchy, the extent of hierarchy in family  $f$  is simply one minus the average score among family members, or

$$H_f = 1 - \frac{\sum C_{if}}{N_f}. \quad (4.2)$$

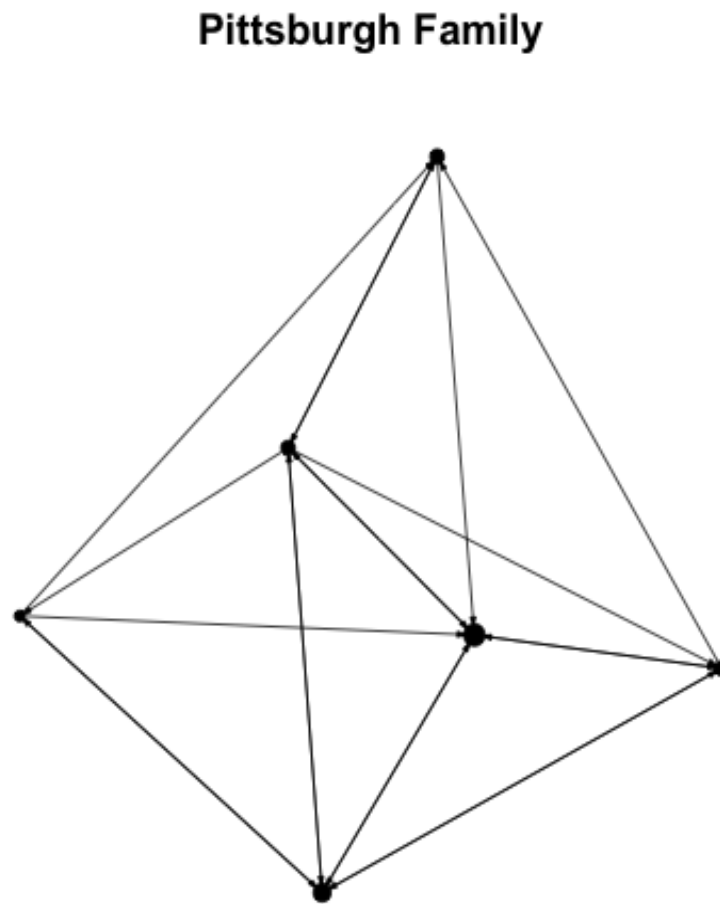
Reflecting the tendency for mafia families to be relatively hierarchical in structure, the resulting scores are high on average in the unit interval between 0 and 1. Yet, despite the seemingly subtle differences, the measure also identifies distinct

patterns of organization across families. Figure 4.3 plots the network of directed ties in the Pittsburgh family, which this measure identifies as featuring a weak hierarchy ( $H_f = .73$ ). The absence of coherent hierarchical relations is striking in the plot, which depicts extensive mutual ties among members and a relatively flat structure. In contrast, Figure 4.4 similarly plots the directed relations within the nearby Cleveland family, identified as having a much stronger hierarchy ( $H_f = .99$ ). Here, the depicted structure is narrow and vertical, reflecting the division of the family into multiple distinct and hierarchically ordered realms of influence, with the different power centers acting as “hubs” at the center of the graph surrounded by less influential and subordinate “spokes.”

## 4.4 Models of Drug Trade Involvement

Table 4.1 presents a series of nested multilevel mixed-effects logistic regressions predicting each mafioso’s participation or non-participation in the drug trade. Most of the covariates included in these models have previously appeared in Chapter 3. Consistent with hypothesis H4, Model 1 shows that mafiosi who attended the 1957 Apalachin meeting—a key indicator of high esteem in mafia circles—were 70 percent less likely to be involved in the drug trade (found by exponentiating the logit coefficient). Younger mafiosi were more likely to be drug trade participants, which can be explained by the tendency for older mafiosi to have accrued greater status within the family hierarchy. Mafioso who owned an interest in at least one legitimate business

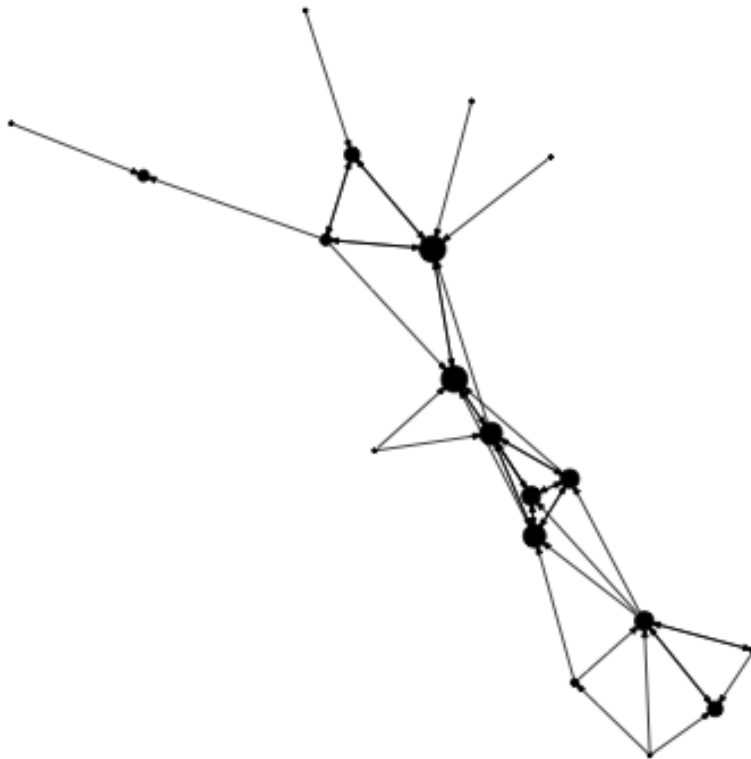
**Figure 4.3:** Example of weak hierarchy



*Note: Nodes are sized according to in-degree. The network of directed nominations is plotted using the Fruchterman-Reingold spring-embedding algorithm.*

**Figure 4.4:** Example of strong hierarchy

### **Cleveland Family**



*Note: Nodes are sized according to in-degree. The network of directed nominations is plotted using the Fruchterman-Reingold spring-embedding algorithm.*

were 65 percent less likely to be involved in the drug trade, lending empirical support to Anthony Russo's suggestion that he and colleagues who had access to legitimate revenue streams were better positioned to stay away from drug-trading.

Model 2 shows that each of these patterns remains when controlling for family-level features. Family size is not correlated with rates of participation in the drug trade in any precise way. However, mafiosi belonging to one of the five New York City families were more than 4 times as likely to have ties to the drug trade. I also adjust separately for non-urban families, which I define as those located in a city with fewer than 500,000 residents as of 1960 (Pittston, Elizabeth, Springfield, Omaha, Tampa, Kansas City, and Denver). We would expect that these families had markedly less access to the metropolitan centers of drug distribution; and indeed, members of such families were less likely to be involved in the drug trade, although this difference is not very precisely estimated in the model. Finally, Model 3 introduces the measure of family hierarchy. Consistent with hypothesis H5, the results show that more hierarchical families had dramatically higher rates of participation in the drug trade. To see how dramatic, consider that a member of the vertically organized Cleveland family is here estimated to be *116 times* as likely to participate in the drug trade as someone in the horizontally organized Pittsburgh family. Controlling for hierarchy, however, we can also see a clearer difference between urban- and non-urban families, suggesting that non-urban families tended to be less hierarchical but also less likely to participate in the drug trade.



**Table 4.1:** Multilevel mixed-effects logistic regressions of drug trade participation

	(1)	(2)	(3)
Apalachin	-1.18** (-2.02, -.33)	-1.22** (-1.98, -.35)	-1.24** (-2.11, -.42)
Non-Italian	1.11 (-.35, 2.28)	1.14 (-.33, 2.45)	1.13 (-.56, 2.84)
Age	-.04** (-.07, -.01)	-.04** (-.06, -.01)	-.04** (-.06, -.01)
Immigrant	.08 (-.45, .59)	.02 (-.57, .49)	.02 (-.52, .59)
Legitimate business	-1.04*** (-1.55, -.52)	-1.05*** (-1.52, -.64)	-1.04*** (-1.50, -.55)
Non-criminal occupation	-.09 (-.73, .52)	-.16 (-.77, .48)	-.15 (-.79, .44)
Kin ties	.08 (-.12, .27)	.10 (-.11, .30)	.09 (-.10, .27)
Family size		.00 (-.01, .02)	.00 (-.01, .02)
N.Y.C. family		1.48* (.05, 2.92)	1.42 (.10, 2.88)
Non-urban family		-.95 (-2.46, .28)	-1.46* (-3.05, -.11)
Hierarchy			18.26* (2.48, 35.10)
Intercept	.36 (-.52, 1.08)	.17 (-.55, .97)	.18 (-.57, .90)
Residual Variance:			
Family-level	2.23 (.61, 4.32)	.88 (.09, 2.12)	.76 (.04, 1.69)

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$  (two-tailed tests). Note:  $N = 707$ . Age, family size, and hierarchy are mean-centered. Models are estimated using Markov chain Monte Carlo (MCMC) methods. Logit coefficients are shown with 95 percent confidence intervals in parentheses.

## 4.5 Summary and Discussion

More than any other mafia industry, the drug trade connected mafiosi operating across the United States. This fact, in and of itself, tells us something important: If the industry that did the most to integrate networks across organizational boundaries was also the one most disapproved by mafia elites and family leaders, this is rather striking evidence against elite coordination as the key mechanism explaining the existence of an integrated and cohesive national network. If the widespread popularity of the drug trade among rank-and-file members in some sense indicated an absence of organizational control over members, however, it is also notable that the rigid and hierarchical structure of family organizations was seemingly part of what drove individual criminals into this path of entrepreneurial deviance outside the family-controlled rackets. For this reason, as suggested earlier, the analysis undertaken in this chapter helps to further crystallize the core empirical argument I have advanced in this dissertation: That entrepreneurial action by marginal actors operating largely beyond the boundaries of family organizations themselves paradoxically gave rise to the cohesive national structure we have in mind when we talk of “The American Mafia.”

There are notable limitations to the analyses presented here, however, and further investigation is needed. In particular, the use of cross-sectional data heavily circumscribes any claim to causality in the regression analyses. I have relied upon attendance at the 1957 Apalachin meeting (also see Chapter 3) to distinguish the elite family leaders who were hypothesized (and shown) to have avoided involvement

in the drug trade. Compared to the continuous *pagerank* measure I have used elsewhere to measure individual status, Apalachin attendance seems at least less likely to reflect causal endogeneity. It remains plausible that previous involvement in the drug trade may have tarnished any particular mafioso's reputation enough to cause him to not be included in the Apalachin meeting; yet, this account is also not inconsistent with the narrative presented here. What I have hoped to demonstrate is the extent to which the drug trade existed as an alternative private order apart from more standard and approved mafia rackets, and one in which the participants were much less likely to be top-level family insiders.

## CHAPTER 5

### CONCLUSION

What was the American Mafia? A national conspiracy directed from the top-down through a Weberian-style bureaucracy? A mythical entity comprised only of locally-rooted, organizationally unrelated clusters of Italian-American criminals? In the end, it is perhaps not too surprising to find that the answer is *both* and *neither*. The American Mafia *was*, in some sense, a national conspiracy—the network of mafia criminals in the United States was connected and integrated such that a mafioso in Providence could reach one in San Francisco through just a few intermediaries. However, this conspiracy was not directed from the top-down, as imagined by policymakers, scholars, and citizens convinced of a *Cosa Nostra* conspiracy. Rather, the connected conspiracy of the American Mafia reflected in important ways the bottom-up, entrepreneurial activity of outsiders excluded from the power structures that dominated mafia organizations themselves.

It is not surprising that this subtlety of social and economic organization could be missed by contemporary observers. However, it also presents a great historical irony. The Italian-American Mafia has been a social, political, and cultural touchstone precisely because of its alluring (or frightening) “conspiratorialness.” While Commissions and national meetings had some role in this structure, however, the other forces that gave the American Mafia its signature cohesion were largely unintended. In fact, they were intended to do quite the opposite. Rules of ethnic and organizational closure were designed to restrict access to mafia-controlled resources

to a closed circle of eligibles, thereby reinforcing closure—but they also drove non-Italians and lower-status Italians into brokerage roles. Strict hierarchies were meant to increase the mafioso's dependence on the family, thereby producing loyal organization men—but they also drove marginal mafiosi into the drug trade when their path to opportunity within the family appeared blocked.

A further irony is that the same forces that seemingly produced the cohesive and integrated mafia network also brought about the Mafia's downfall. As noted in Chapter 4, one practical reason why mafia leaders opposed the drug trade was that they knew it would bring unwanted attention from federal law enforcement agencies previously uninterested in investigating local urban criminal rackets. And bring attention it did, including the U.S. Senate investigations and Bureau of Narcotics dossier relied upon extensively throughout this dissertation. A couple of decades later, after having been the focus of sustained and long-term enforcement efforts, many of the mafia organizations analyzed here would be reduced to a shell of their former selves.

We should of course be cautious not to draw overly broad conclusions from a study of mafia families in one country and historical period. However, the mechanisms underlying the dynamics of mafia organization—especially institutional closure and its intended and unintended consequences—are sufficiently general to invite extensions of the argument to other contexts. In congressional politics, for example, lobbyists, think tanks, and advocacy groups—none of whom hold elected office—likely play a key brokerage role between otherwise only weakly connected ideological or regional

cliques. When local politics are infused with familistic and parochial interests, geographic outsiders are often preferred as arbitrators (Simmel 1971). The common thread is that fractious institutional arrangements permitting solidary groups to hoard resources away from the reach of potential competitors often have the unforeseen or unintended consequence of empowering those who act outside the constraints of parochial control. Nor is there any particular reason to think that the dynamics observed in an institutional field typified by “strong” rules of closure—such as the mafia—would fail to appear in cases of “weak” closure, such as when individuals simply prefer to interact within their own group. Examples abound in studies of ethnic and religious boundaries, from Simmel’s (1971) analysis of European Jews as migrant traders to Bonacich’s (1973) classic work on “middleman minorities” who play the role of broker by buffering exchange across class lines. Up to now, the Weberian concept of closure has found its widest application in studies of regulation and licensing in professions and occupations (Weeden 2002). Its usefulness should not be limited to such work.

Even when network position is shown to be a robust predictor of access to information and other resources, network analysis has often been criticized as mere description—the implication being that the deeper causal mechanisms lie elsewhere (Borgatti et al. 2009). However, institutional theorists of varying stripes have preferred to see network and non-network mechanisms as mutually reinforcing (DiMaggio and Powell 1983; Nee and Oppen 2012; Powell et al. 2005). Consistent with this perspective, the analysis undertaken here demonstrates how informal norms and formal rules embedded in the institutional environment guide and constrain agency,

including the formation of network ties, and are in turn reinforced or undermined by meso-level interactions between actors linked in network space. When institutions are transplanted across time and space, furthermore, they can affect network structure in non-straightforward ways, such as when rules meant to lend cohesion, stability, and closure among Sicilian mafia families unintendedly produce opportunities for brokerage and integration when transplanted to the American context.

We also typically think that institutions operate efficiently by constraining the behavioral options available to actors and encouraging uniform or predictable behavior across a population. However, the counterpoint is that some institutions are strong precisely because they support a *multiplicity* of interests and roles. For example, Dobbin (2009) argues that strong equal opportunity regulations in the workplace emerged not because of clear and uniform expectations set by civil rights-era laws, but rather precisely because the ambiguity of these laws created space for a multiplicity of professional and political interests who understood compliance in many different ways. In the American Mafia as analyzed here, rules and norms originally intended to enforce closure and solidarity within families in fact produced a multiplicity of interests and roles among members and associates of the organization.

Beginning with Simmel, social theorists have long equated “outsiderism” with a unique capability for the brokerage activity that produces greater cohesion and integration across otherwise disconnected social circles. This dissertation has suggested that this capability is conditional on key elements of social and economic organization. Yet, there are other differences. Unlike the European Jews discussed

by Simmel and “middleman minorities” more broadly, non-Italian criminals in mafia circles (to take the example from Chapter 3) were neither migrant sojourners nor socioeconomically disadvantaged outcasts. In many (perhaps most) cases, they were locally established veteran criminals who had once been affiliated with one of the Jewish-American syndicates that predated the rise of Italian-American mafia families. Neither were their ties with Italian mafiosi necessarily weak and transient in nature—collaborative enterprises between Italian and non-Italian criminals (especially in the drug trade) could persist over the course of many years. Ethnic limitations on membership notwithstanding, exchange across ethnic boundaries still seemingly occurred with little reprobation.

This suggests that outsiders are perhaps best suited to the brokerage activity often attributed to them when they are outsiders *de jure* only—when the rules that define group membership clash with concrete exchange relations that readily stretch across membership lines. In this nebulous territory, defined by the disjuncture between formal rules and informal relations, the outsider is able to transform into a partial insider of multiple groups.



## BIBLIOGRAPHY

- Abadinsky, Howard. 1981. *The Mafia in America: An Oral History*. Praeger Publishers.
- Abadinsky, Howard. 1983. *The Criminal Elite*. Westport, C.T.: Greenwood Press.
- Agreste, Santa, Salvatore Catanese, Pasquale De Meo, Emilio Ferrara, and Giacomo Fiumara. 2016. "Network Structure and Resilience of Mafia Syndicates." *Information Sciences* 351:30–47.
- Albini, Joseph L. 1971. *The American Mafia: Genesis of a Legend*. New York: Appleton-Century-Crofts.
- Anderson, R. T. 1965. "From Mafia to Cosa Nostra." *American Journal of Sociology* 71:302–310.
- Aral, Sinan and Marshall Van Alstyne. 2011. "The Diversity-Bandwidth Trade-Off." *American Journal of Sociology* 117:90–171.
- Axelrod, Robert. 1984. *The Evolution of Cooperation*. New York: Basic Books.
- Baker, Wayne E. and Robert R. Faulkner. 1993. "The Social Organization of Conspiracy: Illegal Networks in the Heavy Electrical Equipment Industry." *American Sociological Review* 58:837–860.
- Baldassarri, Delia and Guy Grossman. 2013. "The Effect of Group Attachment and Social Position on Prosocial Behavior. Evidence from Lab-in-the-Field Experiments." *PLoS ONE* 8:e58750.

- Bell, Daniel. 1953. "Crime as an American Way of Life." *The Antioch Review* 13:131–154.
- Berlusconi, Giulia. 2014. "Italian Mafia." In *Encyclopedia of Criminology and Criminal Justice*, edited by Gerben Bruinsma and David Weisburd, pp. 2699–2706. New York: Springer New York.
- Blau, Peter M. 1968. "The Hierarchy of Authority in Organizations." *American Journal of Sociology* 73:453–467.
- Blok, Anton. 1974. *The Mafia of a Sicilian Village, 1860-1960*. New York: Harper and Row.
- Boissevain, Jeremy. 1974. *Friends of Friends*. Oxford: Blackwell.
- Bonacich, Edna. 1973. "A Theory of Middleman Minorities." *American Sociological Review* 38:583–594.
- Bonanno, Joseph. 1983. *A Man of Honor*. New York: St. Martin's.
- Borgatti, Stephen P., Ajay Mehra, Daniel J. Brass, and Giuseppe Labianca. 2009. "Network Analysis in the Social Sciences." *Science* 323:892–895.
- Bothner, Matthew S., Edward Bishop Smith, and Harrison C. White. 2010. "A Model of Robust Positions in Social Networks." *American Journal of Sociology* 116:943–92.
- Bouchard, Martin and Holly Nguyen. 2010. "Is It Who You Know, or How Many

- That Counts? Criminal Networks and Cost Avoidance in a Sample of Young Offenders.” *Justice Quarterly* 27:130–158.
- Brass, Daniel J. 1984. “Being in the Right Place: A Structural Analysis of Individual Influence in an Organization.” *Administrative Science Quarterly* 29:518–539.
- Breiger, Ronald L. 1974. “The Duality of Persons and Groups.” *Social Forces* 53:181–190.
- Bright, David A., Catherine Greenhill, Michael Reynolds, Alison Ritter, and Carlo Morselli. 2015. “The Use of Actor-Level Attributes and Centrality Measures to Identify Key Actors: A Case Study of an Australian Drug Trafficking Network.” *Journal of Contemporary Criminal Justice* 31:262–278.
- Bright, David A., Caitlin E. Hughes, and Jenny Chalmers. 2012. “Illuminating Dark Networks: a Social Network Analysis of an Australian Drug Trafficking Syndicate.” *Crime, Law and Social Change* 57:151–176.
- Bureau of Narcotics. 2007. *Mafia*. New York: Harper-Collins.
- Burt, Ronald S. 1992. *Structural Holes: The Social Structure of Competition*. Cambridge, M.A.: Harvard University Press.
- Burt, Ronald S. 1997. “The Contingent Value of Social Capital.” *Administrative Science Quarterly* 42:339–365.
- Burt, Ronald S. 2000. “The Network Structure Of Social Capital.” *Research in Organizational Behavior* 22:345–423.

- Burt, Ronald S. 2004. "Structural Holes and Good Ideas." *American Journal of Sociology* 110:349–399.
- Burt, Ronald S. 2005. *Brokerage and Closure: An Introduction to Social Capital*. Oxford: Oxford University Press.
- Burt, Ronald S. 2012. "Network-Related Personality and the Agency Question: Multirole Evidence from a Virtual World." *American Journal of Sociology* 118:543–591.
- Buskens, Vincent and Arnout van de Rijt. 2008. "Dynamics of Networks if Everyone Strives for Structural Holes." *American Journal of Sociology* 114:371–407.
- Calderoni, Francesco. 2012. "A Definition That Does Not Work: the Impact of the EU Framework Decision on the Fight Against Organized Crime." *Common Market Law Review* 49:1365–1394.
- Calderoni, Francesco. 2014. "Identifying Mafia Bosses from Meeting Attendance." In *Networks and Network Analysis for Defence and Security*, edited by Anthony J. Masys, pp. 27–48. Cham: Springer International Publishing.
- Campana, Paolo and Federico Varese. 2013. "Cooperation in Criminal Organizations: Kinship and Violence as Credible Commitments." *Rationality and Society* 25:263–289.
- Coase, R. H. 1937. "The Nature of the Firm." *Economica* 4:386–405.
- Coleman, James S. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology* 94:S95–S120.

- Collins, Randall. 1975. *Conflict Sociology: Toward an Explanatory Science*. New York: Academic Press.
- Collins, Randall. 2008. *Violence: A Micro-Sociological Theory*. Princeton, N.J.: Princeton University Press.
- Cornwell, Benjamin. 2009. “Good Health and the Bridging of Structural Holes.” *Social Networks* 31:92–103.
- Coser, Lewis A. 1974. *Greedy Institutions: Patterns of Undivided Commitment*. New York: Free Press.
- Cressey, Donald R. 1969. *Theft of the Nation*. New Brunswick: Transaction Publishers.
- DellaPosta, Daniel. 2017. “Network Closure and Integration in the Mid-20th Century American Mafia.” *Social Networks* .
- DellaPosta, Daniel, Victor Nee, and Sonja Opper. 2017. “Endogenous Dynamics of Institutional Change.” *Rationality and Society* 29:5–48.
- DiMaggio, Paul and Walter W. Powell. 1983. “The Iron Cage Revisited: Collective Rationality and Institutional Isomorphism in Organizational Fields.” *American Sociological Review* 48:147–160.
- Dixit, Avinash K. 2004. *Lawlessness and Economics: Alternative Modes of Governance*. Princeton, N.J.: Princeton University Press.

- Dobbin, Frank. 2009. *Inventing Equal Opportunity*. Princeton: Princeton University Press.
- Ellickson, Robert C. 1991. *Order without Law: How Neighbors Settle Disputes*. Cambridge, M.A.: Harvard University Press.
- Emerson, Richard M. 1962. "Power-Dependence Relations." *American Sociological Review* 27:31–41.
- Erickson, Bonnie H. 1981. "Secret Societies and Social Structure." *Social Forces* 60:188–210.
- Erikson, Emily and Peter Bearman. 2006. "Malfeasance and the Foundations for Global Trade: The Structure of English Trade in the East Indies, 1601–1833." *American Journal of Sociology* 112:195–230.
- Fernandez, Roberto M. and Roger V. Gould. 1994. "A Dilemma of State Power: Brokerage and Influence in the National Health Policy Domain." *American Journal of Sociology* 99:1455–1491.
- Fleming, Lee, Santiago Mingo, and David Chen. 2007. "Collaborative Brokerage, Generative Creativity, and Creative Success." *Administrative Science Quarterly* 52:443–475.
- Fligstein, Neil and Doug McAdam. 2012. *A Theory of Fields*. Oxford: Oxford University Press.
- Freeman, Linton C. 1977. "A Set of Measures of Centrality Based on Betweenness." *Sociometry* 40:35.

- Gallhier, John F. and James A. Cain. 1974. "Citation Support for the Mafia Myth in Criminology Textbooks." *The American Sociologist* 9:68–74.
- Gambetta, Diego. 1993. *The Sicilian Mafia: The Business of Private Protection*. Cambridge, M.A.: Harvard University Press.
- Gelman, Andrew and Jennifer Hill. 2007. *Data Analysis Using Regression and Multilevel/Hierarchical Models*. Cambridge: Cambridge University Press.
- Girvan, M. and M.E.J. Newman. 2002. "Community Structure in Social and Biological Networks." *Proceedings of the National Academy of Sciences* 99:7821–7826.
- Gould, Roger V. 1996. "Patron-Client Ties, State Centralization, and the Whiskey Rebellion." *American Journal of Sociology* 102:400–429.
- Gould, Roger V. 1999. "Collective Violence and Group Solidarity: Evidence from a Feuding Society." *American Sociological Review* 64:356–380.
- Gould, Roger V. 2000. "Revenge as Sanction and Solidarity Display: An Analysis of Vendettas in Nineteenth-Century Corsica." *American Sociological Review* 65:682–704.
- Gould, Roger V. and Roberto M. Fernandez. 1989. "Structures of Mediation: A Formal Approach to Brokerage in Transaction Networks." *Sociological Methodology* 19:89–126.
- Granovetter, Mark S. 1973. "The Strength of Weak Ties." *American Journal of Sociology* 78:1360–1380.

- Granovetter, Mark S. 1985. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91:481–510.
- Greif, Avner. 2006. *Institutions and the Path to the Modern Economy*. Cambridge: Cambridge University Press.
- Hadfield, Jarrod D. 2010. "MCMC Methods for Multi-Response Generalized Linear Mixed Models: The MCMCglmm R Package." *Journal of Statistical Software* 33:1–22.
- Haller, Mark H. 1992. "Bureaucracy and the Mafia: An Alternative View." *Journal of Contemporary Criminal Justice* 8:1–10.
- Hess, Henner. 1973. *Mafia and Mafiosi: The Structure of Power*. Lexington, M.A.: Lexington Books.
- Hillmann, Henning. 2008a. "Localism and the Limits of Political Brokerage: Evidence from Revolutionary Vermont." *American Journal of Sociology* 114:287–331.
- Hillmann, Henning. 2008b. "Mediation in Multiple Networks: Elite Mobilization before the English Civil War." *American Sociological Review* 73:426–454.
- Hortis, C. Alexander. 2014. *The Mob and the City*. The Hidden History of How the Mafia Captured New York. Prometheus Books.
- Ianni, Francis A.J. and Elizabeth Reuss-Ianni. 1972. *A Family Business: Kinship and Social Control in Organized Crime*. New York: Russell Sage Foundation.



- Kleinbaum, Adam M. 2012. "Organizational Misfits and the Origins of Brokerage in Intrafirm Networks." *Administrative Science Quarterly* 57:407–452.
- Klerks, Peter. 2001. "The Network Paradigm Applied to Criminal Organizations: Theoretical Nitpicking or a Relevant Doctrine for Investigators? Recent Developments in the Netherlands." *Connections* 24:53–65.
- Krebs, Valdis E. 2002. "Mapping Networks of Terrorist Cells." *Connections* 24:43–52.
- Laumann, Edward O., Peter V. Marsden, and David Prensky. 1992. "The Boundary Specification Problem in Network Analysis." In *Research Methods in Social Network Analysis*, edited by Linton C. Freeman, Douglas R. White, and A. Kimball Romney, pp. 61–80. New Brunswick.
- Lombardo, Robert M. 1994. "The Social Organization of Organized Crime in Chicago." *Journal of Contemporary Criminal Justice* 10:290–313.
- Lupo, Salvatore. 2009. *History of the Mafia*. New York: Columbia University Press.
- Lupsha, Peter A. 1981. "Individual Choice, Material Culture, and Organized Crime." *Criminology* 19:3–24.
- Maas, Peter. 1969. *The Valachi Papers*. New York: Bantam.
- Macaulay, Stewart. 1963. "Non-Contractual Relations in Business: A Preliminary Study." *American Sociological Review* 28:55–67.

- Macy, Michael W. and Yoshimichi Sato. 2002. "Trust, Cooperation, and Market Formation in the U.S. and Japan." *Proceedings of the National Academy of Sciences* 99:7214–7220.
- Macy, Michael W. and John Skvoretz. 1998. "The Evolution of Trust and Cooperation between Strangers: A Computational Model." *American Sociological Review* 63:638–660.
- Malm, Aili and Gisela Bichler. 2011. "Networks of Collaborating Criminals: Assessing the Structural Vulnerability of Drug Markets." *Journal of Research in Crime and Delinquency* 48:271–297.
- Malm, Aili, Gisela Bichler, and Rebecca Nash. 2011. "Co-Offending Between Criminal Enterprise Groups." *Global Crime* 12:112–128.
- Mancuso, Marina. 2014. "Not All Madams Have a Central Role: Analysis of a Nigerian Sex Trafficking Network." *Trends in Organized Crime* 17:66–88.
- Marsden, Peter V. 1983. "Restricted Access in Networks and Models of Power." *American Journal of Sociology* 88:686–717.
- Mastrobuoni, Giovanni. 2015. "The Value of Connections: Evidence from the Italian-American Mafia." *The Economic Journal* 125:F256–F288.
- Mastrobuoni, Giovanni and Eleonora Patacchini. 2012. "Organized Crime Networks: an Application of Network Analysis Techniques to the American Mafia." *Review of Network Economics* 11.

- McWilliams, John C. 1990. "The Protectors: Harry J. Anslinger and the Federal Bureau of Narcotics, 1930-1962." University of Delaware Press, Newark.
- Merton, Robert K. 1938. "Social Structure and Anomie." *American Sociological Review* 3:672-682.
- Milhaupt, Curtis J. and Mark D. West. 2000. "The Dark Side of Private Ordering: An Institutional and Empirical Analysis of Organized Crime." *The University of Chicago Law Review* 67:41.
- Morselli, Carlo. 2005. *Contacts, Opportunities, and Criminal Enterprise*. Toronto: University of Toronto Press.
- Morselli, Carlo. 2009a. "Hells Angels in springtime." *Trends in Organized Crime* 12:145-158.
- Morselli, Carlo. 2009b. *Inside Criminal Networks*. New York: Springer.
- Morselli, Carlo, Cynthia Giguère, and Katia Petit. 2007. "The Efficiency/Security Trade-Off in Criminal Networks." *Social Networks* 29:143-153.
- Natarajan, Mangai. 2006. "Understanding the Structure of a Large Heroin Distribution Network: A Quantitative Analysis of Qualitative Data." *Journal of Quantitative Criminology* 22:171-192.
- Nee, Victor, Daniel DellaPosta, and Lisha Liu. 2017. "The Entrepreneur's Network, Organizational Form, and Firm Performance." *Working Paper* .

- Nee, Victor and Paul Ingram. 1998. "Embeddedness and Beyond: Institutions, Exchange, and Social Structure." In *The New Institutionalism in Sociology*, edited by Mary Brinton and Victor Nee, pp. 19–45. New York.
- Nee, Victor and Sonja Oppen. 2012. *Capitalism from Below: Markets and Institutional Change in China*. Cambridge, M.A.: Harvard University Press.
- Newman, M.E.J. 2006. "Modularity and Community Structure in Networks." *Proceedings of the National Academy of Sciences* 103:8577–8582.
- Newman, M.E.J. and M. Girvan. 2004. "Finding and Evaluating Community Structure in Networks." *Physical Review E* 69:026113.
- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.
- Padgett, John F. and Christopher K. Ansell. 1993. "Robust Action and the Rise of the Medici, 1400-1434." *American Journal of Sociology* 98:1259–1319.
- Page, Lawrence, Sergey Brin, Rajeev Motwani, and Terry Winograd. 1999. "The PageRank Citation Ranking: Bringing Order to the Web." Technical report, Stanford InfoLab.
- Paoli, Letizia. 2003. *Mafia Brotherhoods: Organized Crime, Italian Style*. Oxford: Oxford University Press.
- Papachristos, Andrew V. 2009. "Murder by Structure: Dominance Relations and the Social Structure of Gang Homicide." *American Journal of Sociology* 115:74–128.

- Papachristos, Andrew V. and Chris M. Smith. 2014. "The Embedded and Multiplex Nature of Al Capone." In *Crime and Networks*, edited by Carlo Morselli, pp. 97–115. New York: Routledge.
- Parkin, Frank. 1974. "Strategies of Social Closure in Class Formation." In *The Social Analysis of Class Structure*, edited by Frank Parkin, pp. 1–18. London: Tavistock Publications.
- Peng, Yusheng. 2004. "Kinship Networks and Entrepreneurs in China's Transitional Economy." *American Journal of Sociology* 109:1045–1074.
- Phillips, Damon J. and Ezra W. Zuckerman. 2001. "Middle-Status Conformity: Theoretical Restatement and Empirical Demonstration in Two Markets." *American Journal of Sociology* 107:379–429.
- Podolny, Joel M. 2001. "Networks as the Pipes and Prisms of the Market." *American Journal of Sociology* 107:33–60.
- Podolny, Joel M. and James N. Baron. 1997. "Resources and Relationships: Social Networks and Mobility in the Workplace." *American Sociological Review* 62:673–693.
- Portes, Alejandro and Julia Sensenbrenner. 1993. "Embeddedness and Immigration: Notes on the Social Determinants of Economic Action." *American Journal of Sociology* 98:1320–1350.
- Powell, Walter W., Douglas R. White, Kenneth W. Koput, and Jason Owen Smith.

2005. “Network Dynamics and Field Evolution: The Growth of Interorganizational Collaboration in the Life Sciences.” *American Journal of Sociology* 110:1132–1205.
- Putnam, Robert D. 2000. *Bowling Alone*. New York: Simon and Schuster.
- Putnam, Robert D., Robert Leonardi, and Raffaella Y. Nanetti. 1994. *Making Democracy Work*. Civic Traditions in Modern Italy. Princeton: Princeton University Press.
- Raghavan, Usha Nandini, Réka Albert, and Soundar Kumara. 2007. “Near Linear Time Algorithm to Detect Community Structures in Large-Scale Networks.” *Physical Review E* 76:036106.
- Reagans, Ray E. and Ezra W. Zuckerman. 2008. “Why Knowledge Does Not Equal Power: The Network Redundancy Trade-Off.” *Industrial and Corporate Change* 17:903–944.
- Reuter, Peter. 1983. *Disorganized Crime*. Cambridge, M.A.: M.I.T. Press.
- Rostami, Amir and Hernan Mondani. 2015. “The Complexity of Crime Network Data: A Case Study of Its Consequences for Crime Control and the Study of Networks.” *PLoS ONE* 10:e0119309.
- Scaglione, Attilio. 2011. *Reti Mafiose: Cosa Nostra E Camorra: Organizzazioni Criminali a Confronto*. Cosa Nostra e Camorra: organizzazioni criminali a confronto. Milan: FrancoAngeli.
- Schelling, Thomas C. 1984. *Choice and Consequence*. Cambridge, M.A.: Harvard University Press.

- Simmel, Georg. 1950. *The Sociology of Georg Simmel: Translated, Edited, and With an Introduction by Kurt H. Wolff*. Glencoe, I.L.: Free Press.
- Simmel, Georg. 1971. "The Stranger." In *The Evolution of Cooperation*, edited by Donald N Levine. Chicago.
- Smith, Chris M. and Andrew V. Papachristos. 2016. "Trust Thy Crooked Neighbor Multiplexity in Chicago Organized Crime Networks." *American Sociological Review* 81:644–667.
- Sørensen, Jesper B and Amanda J Sharkey. 2014. "Entrepreneurship as a Mobility Process." *American Sociological Review* 79:328–349.
- Stovel, Katherine and Lynette Shaw. 2012. "Brokerage." *Annual Review of Sociology* 38:139–158.
- U.S. Senate. 1951. *The Kefauver Committee Report on Organized Crime*. New York: Didier.
- U.S. Senate. 1963. *Organized Crime and Illicit Traffic in Narcotics*. Washington, D.C.: U.S. Government Printing Office.
- U.S. Senate. 1988. *Organized Crime: 25 Years After Valachi*. Washington, D.C.: U.S. Government Printing Office.
- Uzzi, Brian. 1996. "The Sources and Consequences of Embeddedness for the Economic Performance of Organizations: The Network Effect." *American Sociological Review* 61:674–698.

- Uzzi, Brian. 1997. "Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness." *Administrative Science Quarterly* 42:35.
- Uzzi, Brian and Jarrett Spiro. 2005. "Collaboration and Creativity: The Small World Problem." *American Journal of Sociology* 111:447–504.
- Varese, Federico. 2006. "The Structure of Criminal Connections: the Russian-Italian Mafia Network." *Oxford Legal Studies Research Paper* 21.
- Watts, Duncan J. 1999. *Small Worlds: The Dynamics of Networks between Order and Randomness*. Princeton, N.J.: Princeton University Press.
- Watts, Duncan J. and Steven H. Strogatz. 1998. "Collective Dynamics of 'Small-World' Networks." *Nature* 393:440–442.
- Weber, Max. 1978. *Economy and Society*. Berkeley: University of California Press.
- Weeden, Kim A. 2002. "Why Do Some Occupations Pay More than Others? Social Closure and Earnings Inequality in the United States." *American Journal of Sociology* 108:55–101.
- Williamson, Oliver E. 1996. *The Mechanisms of Governance*. Oxford: Oxford University Press.
- Xiao, Zhixing and Anne S. Tsui. 2007. "When Brokers May Not Work: The Cultural Contingency of Social Capital in Chinese High-tech Firms." *Administrative Science Quarterly* 52:1–31.



- Yamagishi, Toshio and Midori Yamagishi. 1994. "Trust and Commitment in the United States and Japan." *Motivation and Emotion* 18:129–166.
- Zucker, Lynne G. 1986. "Production of Trust: Institutional Sources of Economic Structure, 1840–1920." *Research in Organizational Behavior* 8:53–111.